THE NORTH-WESTERN

MEDICAL AND SURGICAL JOURNAL.

NEW SERIES.

VOL II. JULY, 1853. No. 3.

ORIGINAL COMMUNICATIONS.

"*Les symptomes de l'epilepsie sont tellement extraordinaires, tellement au dessus de toute explication physiologique; les causes de cette maladie sont tellement inconnues, que,*" *&c.* ESQUIROL.

"*I think no disease is better understood in its physiology or pathology, since the detection of the* SPINAL SYSTEM, *than Epilepsy.*

THE AUTHOR.

ART. I.—*The Physiology of Epilepsy, and of Paroxysmal Apoplexy, Paralysis, Mania, &c.* By MARSHALL HALL, M.D., F.R.S., ETC.

I HAVE frequently used the subjoined *Table* as the heads of a lecture on the important subject of this communication. I begin by presenting it to your readers:—

I. *General View of Epilepsia, Apoplexy, Paralysis, and Mania.*

1. Epilepsy,
2. Apoplexy,
3. Paralysis,
4. Mania,—all which may be different phases of one disease—may each be arranged into—

CLASS I. The Paroxysmal—
1. Of inorganic Origin;
2. Of Recurrent Paroxysmal Form;
3. Of short Duration, terminating in perfect recovery, or
4. Fatal, without post-mortem appearances, or
5. With such as are Effects only.

CLASS II. The Permanent—
1. Of Organic Origin;
2. Of Permanent Form.

II. *Inorganic Epilepsy and Apoplexy are caused by*

I. Acting through the Diastaltic Spinal System— II. Upon the Muscular and Venous Systems of the Neck, whence,—**

Causes.	I. The Mode of Action.	II. The Medium of Action.	I. Spasmodic Action—	I. Trachelismus, with—
I. The Emotions.—Excitement, Anger, Fright; Awaking &c. II. Certain Physical Causes— 1. Posture; Effort—Mental or Physical; Fatigue; &c. 2. Hyperhæmia; Anæmia; Cachæmia; &c.	Catastaltic or Direct—through*	*The Spinal Centre and	II. Exodic Nerves viz. 1. The Descendens Facialis.— 2. The Descendens Myoglossalis— 3. The Spinal Accessory— 4. The Spinal—(The Pneumogastric, with Palpitation, &c.	of 1. The Platysma-myoid— 2. The Cleido-mastoid, the Omo-hyoid &c.— 3. The Trapezius, the Scaleni, &c.— 4. The Subclavian—	Compression of 1. The External Jugular— 2. The Internal Jugular— 3. The Vertebral— 4. The Subclavian—Veins, or Phlebismus—with Congestion; Effusion; Softening? Obstructed Arteries? &c.
III. The Sleep—	Autostaltic,—in*		1. Recurrent Laryngeal— 2. The Intercostal— 3. The Abdominal—	1 The Arytænoid— 2. The Intercostal— 3. The Abdominal—	II. Laryngismus. 1. Incomplete—with Stridor; &c. 2. Complete—with Efforts of Expiration, or Dyspnœa, &c.
IV. The Irritations— 1. Dental— 2. Gastric— 3. Intestinal— 4. Uterine— 1. Catamenial— 2. Puerperal—	Diastaltic or Reflex,—through I. Eisodic Nerves, viz. 1. The Trifacial— 2. The Pneumogastric— 3. The Spinal—*				

v. Venus nimia præsertim solitaria.

III. *Inorganic Epilepsy, which may be divided into*

v. Venus nimia præsertim solitaria.

III. *Inorganic Epilepsy, which may be divided into the—*

II. **Irritation of the Medulla Oblongata, and Congestions of the Cerebrum—

I. Epilepsia Mitior, and this into

I. Epilepsia Evanescens, with

i. 1. Obscure Trachelismus;
2. Oblivium, Confusion, Vertigo; &c.
3. Distortion of the Eyes, Features, Fingers, &c., &c.
4. Nutatio; Falling; &c.
5. Faintishness;
6. Oneirodynia.

ii. Epilepsia Trachelea, involving the Spinal Accessory, &c., with
1. Aura; Flocci; Tinnitus; Odor Moschi, &c.
ii. 2. Manifest Trachelismus—Fixed Head, Torticollis, Obstipitas;
3. Spasmodic Aura?
4. Laryngeal, Stridor, Cry, Dyspnœa;
5. Bitten Tongue, Lip, or Cheek;
6. Foam, Rattles, &c.

1. Flushing;
2. Stupor;
3. Falling with Violence;

II. Epilepsia Gravior, and this into

I. Epilepsia Laryngea, involving the superior Laryngeal, &c., with

i Trachelismus;
1. Purpurescence;
2. Stupor; Coma;

ii. Spasmodic Laryngismus,
1. Dysecpnœa,
2. Convulsion leading to
1. Coma,
2. Stertor with VIII. II. ii.
3. Augmented Coma;
4. Mania,
5. Amentia,
6. Spasmo-Paralysis.
7. Death.

Superseded by Tracheotomy, precisely in proportion to the Laringismus and its Dyspnœa; leaving, at the most, an Epilepsia Abortiva,

II. Epilepsia Syncopalis, with
1. Pallor, Lividity;
2. Syncope;
3. Sudden Death.

Hidden Seizures;—Mania?—Crime?—Punishment!

Augmented Spinal Excitability and Susceptibility to Attacks.

The Treatment should be equally free from Empiricism in both and consist in—
i. Avoiding the exciting Causes.
ii. Giving
1. Antacids.
2. Gentle Emetics?
3. Gentle but efficient Aperients,
iii. Attending strictly to Posture.
iv. Subduing Excitement by Hyoscyamus.
v. Subduing induced Susceptibility by Strychnia.
vi. Removing organic Effects by Mercurials.
vii. Restoring the general Health, by Air & Exercise, etc., and be founded on an adequate DIAGNOSIS,
Are there any Specifics?

IV. *Inorganic Apoplexy which may be divided into the—*

I. Apoplexia Mitior, and this into

I. Apoplexia Evanescens, with

1. Vertigo; Confusion;
2. Paralysis of Speech; of the Fingers of the Side; &c., &c.

II. Apoplexia Trachelea, with

I. Trachilismus, denoted by—
1. Flushing, Purpurescence, and
2. Tumidity, of the Face and Neck;
3. Vertigo; &c.
4. Stupor; &c., &c.
5. Falling;
6. Paroxysmal Paralysis,

II. Apoplexia Gravior, or

Apoplexia Laryngea; viz.

I. Trachilismus;
1. Purpurescence;
2. Cerebral Congestion;
3. Stupor; Coma;

II. Paralytic Laryngismus, with
4. Stertor; from Paralysis by counter-pressure of
1. The Medulla Oblongata, and thence of
2. The Pneumogastric, and especially of
1. The Recurrents; with
5. Augmented Coma; of
2. The Pharyngeals, with Dysphagia; of
3. The Bronchial, with Rales, &c.
4. The Cardiac,
5. The Gastric, with correlative Derangements;
6. Death.

II. **Congestion of the Cerebrum, and—**

Augmented Spinal Excitability and Susceptibility to Attacks.

The Treatment should be equally free from Empiricism in both, and consist in—

I. Avoiding the exciting Causes.

II. Giving
1. Antacids,
2. Gentle Emetics?
3. Gentle but efficient Aperients.

III. Attending strictly to Posture.

IV. Subduing Excitement by Hyoscyamus.

V. Subduing induced Susceptibility by Strychnia.

VI. Removing organic Effects by Mercurials.

VII. Restoring the general Health, by Air and Exercise, &c., and be founded on an adequate DIAGNOSIS.

Are there any Specifics?

A severe attack of Epilepsy too frequently terminates in *apoplectic* coma and stertor, and sometimes, though less frequently, in a paroxysm of *mania*; whilst repeated attacks lead to loss memory and of intellect in general, or *amentia*. *Paralysis*, partial or hemiplegic, is also a frequent result of the same dire disease. In these cases it is obvious that these different affections are but different phases of *one and the same* disease.

But each of these forms of malady may occur alone and distinctly, and constitute the sole disease. Are they not then, too, but different forms of one and the same pathological condition,—differing probably only in the specific part of the nervous centres primarily or secondarily affected? This opinion is, at least, the result of my own long-continued observation.

The *causes* of these seizures are enumerated in the *first* column of the *second* part of the table. This enumeration is followed by the *mode* and *media* of their action in the second, third, and fourth columns. The anatomist and physiologist will find in these an ample subject of meditation and study. The anatomy and the physiology of the *spinal system* must be previously well mastered, for these are, to diseases of the nervous system, what the stethoscope is to those of the lungs and the heart—the source of their *diagnosis*.

In the *fifth* and *sixth* columns, I have arranged the *muscles* which are chiefly excited into action, and the *veins* which are chiefly compressed by their action—whence result the special forms of the disease. These, too, must be well and deliberately considered by the scientific physician; for on these depend the spinal or epileptic, or the cerebral or apoplectic, forms of the disease; compression of the vertebral veins will be more likely to produce the former, that of the jugulars, the latter.

The contraction of the muscles may be limited to those of *the Neck*, the most familiar and marked form of which is *torticollis*; or it may involve those of the *larynx*, constituting *laryngismus*, so familiar also to every physician. In the former case the symptoms are generally less severe than in the latter; they may indeed be very slight; but they may also be formidable enough: every kind of contortion of the features, neck, limbs and trunk, with bitten tongue, may occur, with '*falling*,' &c., &c. But in the

latter case, or laryngismus, the symptoms are more fearful still: the face and neck become tumefied and purpurescent, with asphyxia, apoplexy, &c., &c. The results of either, if repeated, may issue in impaired intellect. The apoplexy may be so profound as to lead to *stertor*, another form of laryngismus, but *paralytic* in its nature, that formerly noticed being *spasmodic*. Both may be imitated: a drop of water or a crumb of bread fallen on the rima glottidis will produce the *spasmodic* laryngismus; the division of the recurrent branches of the pneumogastric nerves, produces the paralytic.

It is only necessary to observe well to perceive how either form of laryngismus may involve the safety of the patient. It is in this case that tracheotomy or rather trache*otony* steps in and presents us with the *presens remedium*. By this operation the disease is at once disarmed of its violence, and the result may be the preservation of life and even the restoration to health.

I beg here to adduce the case of Dr. Neill, of the Pennsylvania Hospital, Philadelphia, known to the profession through the medium of the American Journal of the Medical Sciences, so ably conducted by Dr. Hayes. I have also great pleasure in quoting a case by Dr. Herrick, of Chicago: The patient was brought into the U. S. Marine Hospital affected with violent epileptic fits, recurrent every twenty minutes, with spasmodic laryngismus, each leaving deeper and deeper coma and stertor, or paralytic laryngismus. It was obvious that the patient would speedily die of laryngeal dyspnœa, asphyxia and apoplexy. It was equally obvious that tracheotomy afforded a chance, the only chance, for life. Dr. Herrick did not hesitate to perform this operation. The patient was greatly relieved; the tumefaction of the face and neck, the stertorous dyspnœa, subsided; a degree of consciousness returned; there was a ray of hope that life might be preserved! But the bronchial tubes had become filled with mucus, a not unusual effect of severe epileptic seizures, and though rescued from laryngeal asphyxia, the patient died, and, as usual, rather suddenly, of bronchial asphyxia. If the operation had been performed earlier, that is before the excessive effusion of bronchial mucus had taken place, the patient might probably have been saved.

Dr. Herrick's conclusion from this case is most favorable to the operation. He would have recourse to it again under similar circumstances, and *earlier* if the opportunity were afforded him.

I can only add that the remaining columns of my table must also be carefully, most carefully studied, and especially that which treats of the influence of the pneumogastric nerve, in its laryngeal, bronchial, cardiac, pharyngeal and gastric branches, on the functions of the larynx, bronchia, heart, pharynx, stomach, especially and distinctly, in epileptic and apopletic affections. It presents a new field of inquiry for the scientific, anatomical and physiological physician. It presents a noble example of the superiority of science over empiricism, and the kind of study by which our profession is to be raised in rank among the sciences and in the estimation of the public. I hail the day when that which *has been* accomplished for astronomy and chemistry, when they advanced from astrology and alchemy, *shall be* accomplished for medicine! Then, and then only, will our profession be esteemed at its just value and attain its just rank and dignity.

I beg to add to this brief communication a remark on *two* points not unconnected with its object;

I understand that Dr. Horace Green, of New York, has cauterized the larynx successfully in epilepsy, passing through this orifice a spunge imbued with a solution of the nitrate of silver, attached to a piece of whalebone. It is plain that Dr. Green is impressed with the part that the larynx plays in this formidable malady. I am unable to form an idea of the degree of promise held out by the measure he has adopted. I trust I need not say how I shall rejoice if Dr. Green's efforts in the cause of science and of humanity prove successful in this instance.

But I have a confession to make. I was impressed with the idea of the difficulty attending the introduction of an instrument into or through the larynx. I still doubted, when Dr. Brainard stated that he had performed that operation; and I said let us try it on the dog. This was done by Dr. Brainard accordingly. The animal's mouth was held open, the tongue was drawn out, being held by the hand holding a dry towel, and the larynx was distinctly brought into view: the instrument was readily introduced *as* the larynx dilated during inspiration. That this was effected was

further proved by passing the stomach tube: when this was inserted and a lamp brought near its opening, the flame was speedily extinguished.

The second point to which I have alluded, relates to tracheotony. Having explained my views to Dr. Brainard, that gentleman promptly acceded to my wishes to perform my operation on the dog.

The skin being divided, a pointed instrument, consisting of two blades, was made to pierce the trachea, and the blades were then separated; into the opening then made, a wire cage—made in the form of a tube, admitting of compression—was readily introduced, and the formidable operation was performed, occupying but a minute or two. The cage was of conical form and could not be readily made to enter further; it was so arranged as to *button* when within the orifice and could only be removed as it was introduced, by compressing the tube and so diminishing its diameter and size.

I think tracheotony need be scarcely more difficult or formidable than venesection. If so, in how many cases, will it tend to save life and intellect, whilst it modifies and mitigates *the* malady, emphatically denominated Herculean?

My own professional career is nearly terminated; therefore I may be allowed to call on my medical brethren everywhere, and now, especially in the United States, to aid in prosecuting an inquiry in which I have been for so many years engaged, not, I trust, altogether without benefit to my profession and to mankind.

ART. II.—*Cold Water in Dysentery.* By F. Blades, M. D.

If it be the accumulated experience of individuals which gives us our *rules* in the practice of medicine, every one ought to contribute his mite, if it be of any value. I am, therefore, prompted to send you a slice of my experience.

Last year I had many cases of dysentery to treat. Some of these "wore the livery" of the ordinary non-malignant variety, and were amenable to the usual remedial means; while others—

the majority—were of the epidemic or malignant variety and with surpassing stubbornness "went their ways" heedless of cure, i. e., by the mostly practised methods.

Now, we, who have not a reputation to live on after a defeat, cannot well afford—if I may use a sinister expression—to lose many patients consecutively, else we fall into disrepute and strait-away lose our practice.

This motive, which was secondary to the heart-felt interest I had in the recovery of my patients, as also this latter motive, caused me to depart from the calomel and opium, etc., etc., *land marks* in treating the more malignant variety of dysentery. I have now in my mind a case, which conjointly with Dr. Fowler, then my partner, I was called upon to treat. The malady "waxed exceeding sore" from its onset. The griping was positively excruciating; the straining extremely ardent and incessant; the stools exceedingly large, grayish and bloody, containing membranous-like shreds; the pulse was quite frequent and not forcible. This is a rudely sketched outline of the condition of the case as was reported to me to have existed prior to my attendance. The doctor who was first called had treated the case with calomel and opium, q. s., castor oil and laudanum, as a laxative, once in twenty-four hours, with other adjuvantiæ now passed from memory, for three or four days, at which time I was called to see this case with him. The above mentioned symptoms were said to be unabated. The pulse was now feeble and about 120; the tongue was covered with a thick brown fur, and dry, the edges were fiery and the whole tongue was dotted over with elevated papillæ—here and there protruding through the fur-coat. The stomach was so excessively irritable that it would scarcely retain a tea-spoonful of water. I suggested an enema consisting of a *strong* solution of nitrate of silver, which was twice or thrice repeated during the ensuing twenty-four hours. Also campor spts. and oil of turpentine, equal parts, to be applied almost hot, to the abdomen. It was of no use. The disease increased in severity. We looked upon the mortal issue as being but a few hours in advance of us. Here was our extremity, and *cold water* was the straw caught at. What miraculous buoyancy there was in that dernier resort! We left off medicine entirely—little use was it

when none would be retained by the stomach—and determined to try cold water. We wrapt the patient in a cold wet sheet and thereupon—having previously passed a stool every ten or fifteen minutes—he lay one hour and a half, without having desire to go to stool. At the end of this time the surface almost glowed with warmth, and there was the moisture of sweat about the face and neck. The patient was then wiped dry with coarse towels and placed in a dry bed. This operation was thenceforward repeated every five or six hours for the next five days, after which time it was only used once or twice in twenty-four hours for two or three days longer. Instead of the warm fomentations, which had been constantly applied, cloths wrung out of cold water were frequently repeated to the abdomen. As enemas we used cold water, simply—8 or 10 ounces immediately after every evacuation. In every case in the treatment of which we used cold water injections it was found to be important that it should be administered immediately subsequent to every stool. They were borne without distress, and much longer. I ought, also, to mention that after the first day we used the cold Litz-bath of the Hydropathists. From the commencement of this treatment the irritability of the stomach was entirely appeased; the stools became less and less in frequency and of a more natural appearance and consistence. As a diet, as well as an auxiliary to the treatment, we ordered the animal broths well salted.

Several other cases I have in my mind of a like character with the above. With the exception of one, however, none of them were so violently attacked. That case being of a more robust habit the disease did not succomb so readily. I commenced treating with calomel, ipecac. and *one grain* of morphine every three hours—at the end of twenty-four hours giving a castor oil laxative—warm fomentations to the abdomen; enemas of cold water and laudanum. This course was kept up with more or less modification until the expiration of a week. I was not flattered by the progress my patient had made for the better. I then resorted to the water treatment—carrying it out as in the first instance. Upon the first using of the wet sheet the bowels were quieted two hours—having been previously moved as often as from 15 to 30 minutes. The patient kept right on improving—steadily yet, I confess, slowly.

It was gratifying to see the complete relief from the excruciating tormina and tenesmus which followed the "wet-sheet-packing."

In this case I used, as often as once in four hours, the turpentine emulsion, strongly charged with laudanum. I also occasionally ordered laudanum in the injections.

In many cases, the cold, wet bandage and cold water injections were used as auxiliaries to other treatment, and with a highly gratifying effect.

I am so thoroughly convinced of the powerful efficacy of cold water in the treatment of dysentery that I do not hesitate to say I regard it as *one* of the chief remedies for combating that formidable disease.

Dr. Bennett, of this place, a practitioner of many years standing, and a correct observer, after being repeatedly disappointed by depending upon the ordinary remedies alone, is, upon fair trial in many instances, enthusiastic in his confidence in cold water as a powerful auxiliary in treating dysentery.

It would be absurd to argue a general rule from such limited experience, yet its effects have been so highly gratifying in the hands of many practitioners, that it is hard to resist the conviction that cold water deserves a more honorable place among the therapia of dysentery than it has hitherto obtained.

ART. III.—*Pneumothorax with Effusion: Post mortem, etc.* By IRA E. OATMAN, M. D., of Sacramento City, California.

MR. A., æt. about 38, sanguine—nervous temperament, of replete habit and a free liver, had been afflicted with some disease of the chest since the great conflagration of this city, in November last—having been subject to a chronic cough for many years. He spent the winter in San Francisco on account of the fire and flood in this city. On his return, he was suddenly attacked with dyspnœa; which nearly proved fatal in a few hours. He was treated by another physician for Hydrops Pericardii, with some improvement for a month. A stupid quack being allowed to prescribe, the attending physician withdrew from the case; and I was called on the 6th of March last. I found the patient sallow and emaciated, with œdema of the extremities.

He had colliquative diarrhœa, hectic fever and night sweat, the pulse 90 to 100 per minute. The epigastric and hypochondrial regions much distented, elastic, tender and dull on percussion. The left side of the chest enlarged, immovable, the intercostal spaces protruding and extremely resonant on percussion down to the 6th rib, in the erect position. Slight dullness in the superior posterior region. Auscultation revealed no respiratory sound of that side; but the cavernous sound of the voice. Succussion produced the splashing sound, followed sometimes by the metallic tinkling. The respiration of the *right* side hurried and puerile. The right mammary region dull on percussion. The impulse and sound of the heart beneath the right nipple. Mucous rale in the right subclavicular region—the expectoration being muco-purulent. The treatmeat was tonic and astringent, with an anodyne at bedtime and the Pot. Iodide. Later in the disease, he took the Cod Liver Oil.

The Diagnosis was Pneumothorax with effusion and hypertrophy, or abscess of the liver. He died comatose, on the 22d of the same month. *Post mortem*, 30 hours after death, in presence of six other physicians. A small puncture being made into the left side of the chest, a great quantity of (apparently) sulph. hydrogen gas escaped with a hissing sound.

The left pleural sac contained about a gallon of purulent fluid about the consistence of milk. The costal pleura ulcerated and gone,—leaving some of the ribs bare. The left lung compressed to less than one fourth its natural size, was hepatized, tuberculous and impervious to air. The right lung had tubercles in the superior portion. The heart and pericardium were natural but with the mediastinum, were pressed into the right side,—the heart being beneath the right nipple.

The liver was pale and hypertrophied to twice its natural size. The other viscera not examined.

I proposed to practice paracentesis thoracis, but, on being told he could not recover, his friends declined having it done.

This had undoubtedly been a case of neglected, or maltreated, pleuropneumonia, with tuberculosis of the left lung. That the

gas, or air with which the cavity was filled, was not from the decomposition of the effused fluid, but that it passed through the lung, I was fully convinced by the manner of its appearance.

Sacramento, May 10, 1853.

ART. IV.—*Oxalate of Lime, and its relations to certain forms of Neuralgia.* Read before the Cook County Medical Society. By H. A. JOHNSON, M.D.

WE are indebted for what we know of this deposit mostly to Dr. Golding Bird. From his observations he was led to the conclusion, that oxalate of lime occurs in more than one-third of the cases in connection with an excess of uric acid or urate of ammonia, that in all cases there is an excess of urea, and that it is frequently accompanied by an excess of the phosphates; he also thinks it probable, that the uric and oxalic diatheses are both produced by the same morbid influences.

Uric acid, as existing in normal urine, is, without doubt, derived from the nitrogenized tissues of the body, but when found in excess, it may usually be traced either to ingesta, which the juices of the stomach have not power to dissolve, or to a too rapid destruction of tissues under the influence of heat, &c., as in fevers and inflammations; can oxalic acid be traced to a similar source?

Dr. G. Bird has presented a very ingenious theory for the production of this acid from urea and uric acid, but there is generally an excess of one or both of these ingredients accompanying the oxalic deposits. Should we expect this to be the case, if the abnormal product was the result of a transformation of the urea and uric acid? It seems to me not. My own observations have been limited, but I have thought, from a careful study of quite a number of cases, that, while a temporary functional disease of the digestive organs or the introduction into the digestive tube of a large amount of food, difficult of perfect solution in the juices of the stomach, will generally give rise to uric acid deposits in the urine, chronic disease of the alimentary canal, whether functional or or-

ganic, will *more* generally be found to exist with the oxalic diathesis.

In quite a large number of instances in which I have observed the oxalate of lime in the urine, the patients have not only been affected with dyspepsia, but have also been subject to severe attacks of neuralgia. In the first few instances, the neuralgic pains were confined to the lower extremities, and I strongly suspected that they were produced by mechanical irritation of the vesical mucous membrane from the crystals of the oxalate with which the urine was loaded at the commencement of the attack, but which, towards the termination, were replaced by an excess of the phosphates.

I have since observed neuralgic pains in the face, superior extremities and in the chest, co-existing with oxaluria, and, after carefully studying a number of cases, it seems to me evident, that the neuralgia and the urinary deposits sustain to each other an intimate relation through a common cause, viz: the derangement of the digestive organs.

It is perhaps probable that oxalic acid, whether produced from mal-assimilated food, as I think, or, from a metamorphosis of urea and uric acid, may exist first in combination with ammonia, as Dr. G. Bird has suggested. If so, it is possible, that it may, instead of being selected by the kidneys and combining in those organs with lime, be precipitated in the tissues. The crystals of this new salt, many of them smaller than blood globules, and presenting sharp angles and edges, may thus, by mechanical irritation, act directly upon the suffering structures, producing that intense and indescribable pain, for controlling which, anodynes and narcotics have so little power.

Permit me, to allude to my own personal experience. During the last few months I have been frequently annoyed by neuralgic pains, and always after eating freely of oranges. I had never been in the habit of using this fruit until during my recent visit south, but while in Natchez and New Orleans, it constituted al-

most my only diet. I also eat very freely of it during my return home.

It is to my mind an interesting fact, that the first neuralgic pain that I ever experienced, so far as my memory serves me, was while in Natchez. Since my return I have frequently partaken of the fruit, and almost always with the same result, pains of a neuralgic character in my face, chest, knee, dorsum of the foot, &c. These facts induced me to institute the following experiment.

At 8 o'clock A. M., I breakfasted on beef steak, potatoes, corn bread and two eggs. After breakfast I walked two miles. At 11 A. M., the urine passed, was normal in color, specific gravity 1030. After standing there was no deposit of any kind; on a careful microscopic examination, I was unable to detect a single crystal of the oxalate of lime. I then eat four large oranges; at 1 P. M., I dined on a small quantity of roast beef, and whortleberry and green currant pie. At 7 P. M., the urine passed was of straw color, specific gravity 1036. After standing 30 minutes, a sediment was thrown down, consisting mainly of oxalate of lime in very large beautiful crystals. I think I never saw a specimen of urine in which it existed in greater abundance, or in which the crystals were larger. It also contained urate of ammonia and an excess of urea. I placed some of it in a watch glass, and added strong nitric acid; in a few moments it was almost a solid mass from the crystals of nitrate of urea. The urine passed the next morning at 7 o'clock had a specific gravity of 1030, and contained an excess of urea and uric acid and epithelial scales. At 11 P. M. the urine was normal. I then eat four more large oranges, and went to bed. The urine passed at 7 o'clock the next morning was loaded with the oxalates. These two experiments, one upon the urine of food, and the other upon the urine of blood, seem to me to indicate: 1st, that oxalic acid may be produced from the ingesta; 2d, that oranges, and probably all fruits containing citric acid, may give rise to the oxalic diathesis.

The manner in which the transformation is effected is uncertain,

nor is it a matter of much consequence. I venture, however, to present as a possible explanation the following formula:

$$\text{6 at. of cit. acid} = \begin{matrix}\text{C.}\\24\end{matrix}\ \begin{matrix}\text{H.}\\18\end{matrix}\ \left.\begin{matrix}\text{O}\\30.\end{matrix}\right\} = \left\{\begin{matrix}\text{C.} & \text{H.} & \text{O.}\\12 & & 18 = 6\text{ at. oxalic acid.}\\12 & 10 & 10 = 2\text{ at. lactic acid.}\\ & 2 & 2 = 2\text{ at. of water.}\\ & 6 & \end{matrix}\right.$$

We have remaining six atoms of hydrogen, which, united with 2 at. of nitrogen, would produce 2 at. of ammonia.

What influence have the organic acids in causing neuralgia through the derangement which they produce in the performance of the digestive functions? Do the neuralgic pains depend upon mechanical irritation, as I think may be possible, or do they depend upon perverted nutrition of the nervous structures, as I think more probable? These are interesting subjects of inquiry, but I have noi time to pursue them further.

An Inquiry, Critical and Experimental, into the Pathology of Fever. By N. S. Davis M. D. Professor of Pathology, Practice of Medicine, and Clinical Medicine, in Rush Medical College; and one of the Physicians to the Ill. Gen. Hospital.

[Continued from Page 112.]

Present Appearance or Symptoms.—The countenance is dull and inexpressive; face bloated; skin sallow; lips and tongue pale; eyes clear; tongue and mouth clean and moist; universal œdema of the cellular tissue to such an extent that pressure leaves pits on any part of the body and extremities, the latter being much swollen; abdominal dulness and fluctuation, indicating moderate effusion into the cavity of the peritoneum; hepatic dulness appeared to occupy a less space than natural, leading to suspicion of incipient cirrhosis; certainly no evidence of enlargement of the liver or spleen; thoracic resonance good, and respiratory murmur normal, except feebler than usual; rythm and sounds of the heart normal, except a plain anemic bellow's murmur; pulse small, soft, and 80 per minute; bowels regular and fœces natural in appearance; urine scanty and loaded with urate of ammonia, giving it a clouded appearance; appetite impaired; muscular weakness very great; position recumbent and dorsal.

History.—The patient has had intermittent fever during the last two months, at least, but cannot learn the exact length of time. He has still regular paroxysms every morning, exhibiting a well marked chill, succeeded by a hot stage, during which the pulse is much excited and the anæmic bellow's murmur of the heart very loud and distinct.

Treatment.—Viewing the case as one of extreme loss of tonicity in the solids, and great impoverishment of the blood, from a protracted continuance of that peculiar disturbance of the vital properties, which constitutes the essential pathology of periodical fever, without any satisfactory evidence of local visceral disease, the plain indications of treatment, were, first, to interrupt the paroxysms, and second, to improve the tonicity of the solids and the composition of the fluids.

To fulfil the first, he was ordered chloride of sodium ℥j., and sulphate of quinine 12 grs., to be divided into four powders, and one given at such intervals that the whole would be taken before the time for the next chill.

Nov. 28th. Had a chill this morning, but much lighter than before. Continue same medicine until four more doses are taken, with animal broth well salted for nourishment.

Nov. 29th. No chill or fever this morning. All other symptoms as at first. Ordered a powder composed of chloride of sodium 10 grs., sulph. quinine 2 grs., carb. of iron 3 grs., to be given four times a day, and continue same diet.

Nov. 30th. No return of chills or fever; otherwise all the symptoms, including the debility, the dropsical effusions &c., were the same as on the day of admission. I now took from his arm, in a clean glass cup, 1448 grs. Troy weight, of blood for examination and analysis. He was then ordered a powder, consisting of extract of sanguinis or dried beef's blood, 20 grs. and sulp. quinine, 2 grs., to be taken four times a day, with an infusion of juniper berries and *uva ursi* for a drink. A diet of animal broth, milk and bread was continued. This treatment was steadily persisted in with a pretty uniform improvement in all the symptoms for three weeks, when he was discharged from the hospital without any symptoms of intermittent fever or dropsy, and feeling quite well. I met him again in the street on the 30th of December, when he looked and felt entirely well.

Examination of the Blood.—The blood coagulated as quickly as in health; the clot becoming firm, small, floating in a clear serum, and retaining accurately the shape of the vessel containing it, without being either cupped or buffed.

Viewed under the microscope, with an object glass magnifying 850 diameters, the red corpuscles differed in no respect from their appearance in healthy blood, except they were in a slight degree more distended or globular. Occasionally one was seen presenting a shrivelled, irregular, and corrugated appearance, but not more so than is sometimes seen in persons apparently in good health. The white corpuscles were certainly deficient in number, only *one* being seen during an examination of six or eight different fields, and the addition, to some of them, of distilled water and acetic acid for the purpose of rendering them more distinct.

The 1448 grs. of blood, after standing, yielded 1048 grs. of clear serum, and 400 grs. of clot. The latter being carefully

washed and the product dried over sulph. acid, under the receiver of an air pump, gave 2 grs. of fibrin.

The 1048 grs. of clear serum, by evaporation and careful drying over the acid in a vacuum, yielded 75 grs. of solid matter, and 973 grs. of water.

The 398 grs. of clot, treated in the same manner, gave 98 grs. of solid matter, and 300 grs. of water.

The 75 grs. of solid matter from the serum, and the 98 grs. from the clot, after digesting twenty-four hours in strong sulphuric ether, yielded to the latter only 1 gr. of soluble matter. The solid matter of the serum left, after incineration in a porcelain crucible, 1,5 grs. of ash. That of the clot yielded, by the same process, 4,5 grs. of ash.

The combined results may be stated in tabular form, as follows, viz:

Whole Amount of Blood Examined, 1448 Grains.	
Water,	1273, grains.
Red Corpuscles,	72,1 "
Albumen,	93,9 "
Fibrin,	2, "
Matter soluble in Ether,	1, "
Ash or saline matter	6, "
Total	1448,0 grains.

Proportion in 1000 Parts of Blood.	
Water,	879,14 parts.
Red Corpuscles,	49,79 "
Albumen,	64,84 "
Fibrin,	1,38 "
Matter soluble in Ether,	,69 "
Saline matter	4,14 "
Total	999,98 parts.

Case 2.

The description of this case may be condensed from my note book, as follows, viz: Mr. Sampson, a Swede, aged 23 years, was admitted into the hospital Nov. 28, 1852. Says he has had a quotidian intermittent almost constantly during the last six or eight weeks. At present he is moderately emaciated; countenance sallow; lips and tongue pale; pulse 85 per minute, and easily compressed; cutaneous and urinary secretions diminished, with slight

tendency to diarrhœa, and great muscular weakness. No signs of œdema or of visceral disease, either in the chest or abdomen.

His intermittent paroxysms were promptly arrested by the exhibition of chloride of sodium and sulph. of quinine, in the same manner as in case No. 1. On the fourth day after admission, no chills having recurred since the second day, I took 1410 grs. of blood from his arm for examination, and ordered him extract of sanguinis, 15 grs., four times a day, with a nutritious diet. He continued this treatment steadily, with uniform improvement, and was discharged apparently well near the end of the third week after admission.

Examination of the Blood.—In coagulating and under the microscope, this blood presented the same phenomena and appearances as No. 1. The clot was larger in proportion to the serum, but there was the same shape, firmness, &c., and the same deficiency of white corpuscles. The different steps of analysis were conducted in all respects the same as in the former case, and the result stated in tabular form is as follows, viz:

WHOLE AMOUNT OF BLOOD EXAMINED, 1410 GRS.

Water,	1182,50 grains.
Red corpuscles,	116,74 "
Albumen,	98,26 "
Fibrin,	3.50 "
Matter soluble in ether,	1,00 "
Ash or saline matter,	8 00 "
Total,	1410,00 "

PROPORTION PER 1000 PARTS.

Water,	838,65 parts.
Red corpuscles,	82,79 "
Albumen,	69 68 "
Fibrin,	2,48 "
Fatty matter,	71 "
Saline matter,	5,67 "
Total,	999 98 "

CASE 3.

December 9, 1852, Mr. Gibbs, a German, aged 30 years, was admitted into the General Hospital in the advanced stage of enteric or typhoid fever. It is now three weeks since the attack commenced, or since he was confined to his bed. He is moderately

emaciated; his countenance dull and inexpressive; his face and lips deep red; eyes heavy; mouth dry, with some brown sordes around the teeth; tongue red, pointed, smooth and dry; dulness of hearing; moderate delirium, especially during the night; skin dry, harsh, and above the natural temperature; pulse 112 per minute, soft and easily compressed; abdomen covered with patches of a red papular eruption, full and tympanitic; urine scanty; discharges from the bowels average three or four per day, are thin, brown, and offensive, and during the last eighteen hours they have been more frequent, copious, and tinged with blood. I opened a vein and took from his arm 1634 grs. of blood for examination.

Treatment.—The patient was ordered a blister over the abdomen, and an emulsion, consisting of oil of turpentine ʒij, tinct. opii ʒij, gum Arabic and white sugar, each ʒiij, rubbed thoroughly together, with the addition of water ʒij; of which a fluid drachm was to be given every three hours, with beef tea well salted for nourishment, and sponging of the surface with warm water every afternoon.

This treatment was continued, without alteration, four days, with a gradual improvement of all the symptoms; three grains of quinine were then added to each morning dose of the emulsion, and in four days more convalescence was fully established. Soon after convalescence, an abscess of moderate size appeared on one arm, was opened and discharged considerable unhealthy pus, but soon healed. December 30th, he was discharged from the Hospital quite well.

Examination of the Blood.—The blood, as it flowed from the vein, was of a very dark color; and, examined under a magnifying power of 850 diameters, soon after it was drawn, the red corpuscles were seen much more variable in size, and more irregular in appearance than in healthy blood; one-third of the whole number brought into view were much below the ordinary size, while a few appeared nearly as large as the white corpuscles; and the same disparity in size was maintained after the addition of distilled water. A much larger number were also irregular, shrivelled or plaited, than in healthy blood. No white corpuscles were seen on any of the fields examined, though they were diligently sought for. The blood coagulated in the vessel very slowly and in par-

tially disconnected masses, which, however, slowly united into a uniform clot, preserving the shape of the cup, without any buff, and less firm and compact than the clots of No 1 and 2.

After standing 36 hours, the 1634 grs. of blood gave 675 grs. of clear serum, and 959 grs. of clot. The several proximate constituents having been carefully separated, in the same manner as in the preceding analyses, presented the following results, viz:—

THE WHOLE AMOUNT OF BLOOD ANALIZED, 1634 GRS.

Water,	1327,50 grains.
Red corpuscles,	174,47 "
Albumen,	109.93 "
Fibrin,	4.50 "
Matter soluble in ether.	1.10 "
Ash or saline matter,	16 50 "
Total,	1634.00 "

PROPORTION IN 1000 PARTS.

Water,	812,42 parts.
Red corpuscles,	106,77 "
Albumen,	67 27 "
Fibrin,	2 75 "
Fatty matter,	67 "
Saline,	10 09 "
Total,	999 97 "

Remarks.—Cases No. 1 and 2 were selected as fair specimens of the uncontrolled influence of intermittent fever on the solids and fluids of the human system, when protracted and uncomplicated with any appreciable local lesions. They represent different stages in the progress of the same morbid actions, and the results of the analyses of the blood, show simply different *degrees* of impoverishment of the same proximate elements.

The first presents one of the most extreme cases of simple impairment of the vital properties of the solids and impoverishment of the fluids, that I have ever seen recover. The second, represents a much more numerous and common class of cases.

The third case was a very characteristic example of the most common form of continued fever. And certainly the blood, viewed microscopically and analytically, presents characteristics as strikingly diverse from the two first specimens, as do the symptoms of the one form of fever from those of the other. In the two first

specimens the principal morbid changes consist in absolute impoverishment of the essential constituents of the blood, with only slight apparent alteration in their qualities; but in the third specimen, the actual impoverishment was slight, while impairment of the qualities or properties of the several constituents was strikingly exhibited.

One interesting feature was presented by all the specimens; which was the paucity of white corpuscles. Whether this is a uniform characteristic of the blood, in cases of idiopathic fevers, uncomplicated with local inflammations, can only be determined by a large number of observations in each form of disease.

In one respect the condition of the blood in the first case just detailed, does not agree fully with the general conclusions arrived at by M. M. Bacquerel and Rodier, in their recent elaborate memoir on diseases of the blood, read to the Academy of Sciences at Paris. They say that, "the *diminution of albumen* produces dropsy; speaking generally, *dropsy* is the symptom of diminution of *albumen*." I have met with very few cases of disease, which presented a more universal tendency to, or development of dropsical effusions and infiltrations, than the one just alluded to; and yet the analysis of his blood showed very little deviation from the normal proportion of albumen; scarcely more, in fact, than in both the other cases, neither of which manifested any symptoms of dropsy whatever. Instead of coinciding with the assertion that "*most dropsies, called essential*, are due *to a diminution of the albumen*," my own observations and analyses compel me to regard the diminution of albumen as a coincident rather than an essential cause. The loss of albumen, like every other change by which the solid constituents are lessened in proportion to the aqueous element, doubtless predisposes to dropsical effusions, but is not of itself the efficient cause. If it were so, more or less dropsical effusion should accompany every case of deficient albumen, which certainly has not been the fact within the sphere of my observation; on the contrary, in reviewing all my examinations of the blood taken from fever patients at different stages of the disease, I have not been able to trace any uniform connection between the proportion of albumen and the development of dropsy. I have observed as a general rule, that œdematous or dropsical symptoms super-

vened much the most frequently, in those cases characterized in their course by exalted susceptibility or high excitement, with diminished tonicity or vital affinity. These characteristics are much more constantly present in the periodical than in the continued forms of fever, and most of all in the eruptive or exanthematous class. From this, together with the fact that we sometimes meet with great impoverishment of the blood, including diminution of the albumen, without any dropsy, and in other instances dropsy without any such impoverishment; I have been induced to regard the *essential* cause of dropsy as an impaired state of that elementary property of the solids called *tonicity* or vital affinity; and that the diminution of albumen, or any other kind of impoverishment of the blood, acted only as a coincident circumstance, which, by lessening the *consistency* of the blood, aggravated mechanically the tendency to effusion or infiltration. In reference to the changes which the blood undergoes in the progress of fevers, Dr. Drake, in his recent Systematic Treatise, remarks, "I do not know that any experiments have been made on the relative proportion of the proximate elements of the blood, in *our* autumnal fever. Andral and Gavarret, in the hospitals of Paris, made such experiments on the blood of seven patients laboring under intermittents of long standing; and found the mean proportion of fibrin to be *three and a third* of one thousand parts, the normal quantity being three. As many chronic cases of the fever are made such by inflammation of some organ, we may presume that in these cases some were complicated with such inflammations. As to the other proximate elements of the blood, the solid residue of the serum was eighty parts in the thousand, the natural proportion; but the blood corpuscles were, on an average, one hundred and four parts in the thousand, while one hundred and twenty seven is the normal number. Thus, it appears that protracted intermittents produce impoverishment of the blood —spanemia—the condition present in chlorosis; and this accounts in part for the peculiar hue and puffy visage of old ague patients, who so closely simulate chlorosis in their appearance."—See page 820. The two analyses of blood from patients laboring under intermittent fever, which we have given, differ from those of

Andral and Gaverret, in showing a less proportion of fibrin as well as of almost all the other solid constituents of the blood.

For further details on this subject, see Appendix note A.

Notwithstanding the obvious and essential differences between the two great classes of fever now under consideration, they are susceptible of a close approximation, if not an absolute conversion of one into the other.

It is well known that protracted and continuous exercise ultimately exhausts the contractility of the voluntary muscular fibres, and they cease to act until a period of repose has restored their wonted susceptibility. In the same manner, when the over-excited organic actions, which characterize the remittent form of fever, continue unchecked for a considerable period, and the blood become correspondingly impoverished and over-charged with effete matter of a depressing character, the previously exalted susceptibility of the tissues becomes subdued and depressed to the same degree as in the originally Typhoid form of disease. This change is most apt to occur during the third week of the disease, and is marked by a decided diminution of the force of the pulse and capillary circulation; by greater dryness of the respiratory and cutaneous surfaces, inducing more dryness of the tongue and lips with accumulating sordes around the teeth; by greater obtuseness of all the nervous functions, and by a more unsteady or tremulous action, of the muscular structures. When these symptoms supervene it is a common remark, that the patient has "fallen into a *Typhoid* state"; or that the fever, previously remittent, has now assumed the Typoid form. This change from the periodical to the continued type of fever, resulting from the ultimate exhaustion or depression of the vital susceptibility, is by no means of unfrequent occurrence; but the reverse change, from the continued type to the true periodical, is so rare that I have never seen a well marked case of the kind. The reason is obvious. The transition from a higher to a lower grade of action, from an exalted to a depressed state of the vital forces, is a natural result of protracted morbid action.

But to pass from depression to exaltation from mere continuance of the diseased processes, would be very much like resting a weary limb by protracting its exercise.

The foregoing views of the essential pathology of fevers, are much strengthened by the phenomena of eruptive fevers, and those properly styled symptomatic. The first arise directly and indisputably from the presence of some virus or poison in the blood, which by its general distribution throughout the whole system, and its irritating qualities, strongly exalts the elementary susceptibilty and thereby rapidly developes an active grade of irritative fever. This continues generally without remission or abatement, until the original cause by some special affinity for the cutaneous tissue, finds in it a lodgement, thereby relieving in a marked degree the general system until it is secondarily disturbed from the severity of the inflammations established in the cutaneous surface. On the other hand, general fibrile symptoms never arise directly from the existence of local inflammation, until the latter, by its extent and persistence, so far interferes with the equality of the circulation of the blood, or with some excretory function which causes the latter to become impregnated with retained effete matter, as to disturb the universal susceptibility of the tissues. Generally, both these modes of disturbing the elementary properties co operate in establishing general fever, in connection with local inflammation. The primary increased determination of blood to the inflamed part, leaves a defective and disturbed circulation in all other parts of the body. This defective circulation is equivalent to a diminution of the natural stimulant which, by its action on the inherent organic susceptibility, excites and sustains those primary functions, called nutrition, secretion, calorification, &c.; and hence all these become immediately depressed, giving rise to those feelings of indisposition accompanied by alternations of temperature, sometimes amounting to a well formed chill, which characterize the incipient stage of all severe attacks of inflammation.

But this depression of the nutritive, calorific, and secretory functions, necessarily interferes with the metamorphosis of the tissues and retards depuration of the blood, through the action of the skin, kidneys, lungs, &c., thereby causing a sudden and rapidly increasing change in the quality of the blood, by which it is not only rendered irritating to the delicate lining membrane of the whole vascular system, but also morbidly exciting to the susceptibility of all the tissues. With this change in the quality of the

blood and its action on the susceptibility of the tissues, comes a corresponding change in the organic actions. The primary feelings of depression, of blunted sensibilities, and variableness in temperature, rapidly give place to those of excitement, acuteness of sensibil ty, steadily increased heat, and all the phenomena of irritative or inflammatory fever. Of course the specific grade of the febrile symptoms, will depend upon the extent and location of the organ primarily affected, and the previous condition of the vital properties or forces. If from any cause, these properties, and especially that of tonicity, have been in an impaired state previous to the occurrence of the local inflammation, as is generally the case with those who suffer from the privations of poverty in cities, or from intemperance, there will be manifested early a tendency to a typhoid character. The same is true of the inhabitants of highly malarious districts where intermittents and remittents prevail during the summer and autumn. There remains in the inhabitants of such districts, after the warm season has passed away, such a modification of the elementary conditions o' vit l action, that the occurrence of an inflammation in any important organ, is accompanied by a less sthenic grade of febrile action, than in inflammations of the same extent occurring in inhabitants of healthier districts of country. Here such inflammations are often promptly amenable to modes of treatment, that would entirely fail in other localities. It is thus, that we find the primary and *essential pathology* of all fevers, whether continued or periodical, whether idiopathic or symptomatic, to consist in a disturbance of the natural condition and mutual relations of the three essential and universal elements of vital action, viz: tonicity or a definite texture, susceptibility, and the stimuli capable of acting on them. A general disturbance of the mutual relations of these three elementary conditions, is as constantly and certainly the primary essential change constituting fever, as is the disturbance of the local capillary circulation, the primary element in inflammation. And here is the true "*bond*," spoken of by the philosophic Holland, "by which to associathe together numerous forms of disease." Here, too, is the "*oneness*" of Copeland, and the "*common principle*," mentioned by Dr. Wood, in the paragraph already quoted at the beginning of this Essay. The common principle, the bond of union, the *oneness*

of all fevers, consists in their origin from disturbance of the same elementary properties and functions; while their diversity consists in the different direction given to the disturbance, by the action of exciting causes possessing specifically different qualities. Thus we have the same vital properties morbidly disturbed in the profound depression of a malignant intermittent as in the most excited paroxysm of an inflammatory remittent, or in the slower and more obtuse form of continued fever. But in the first, both tonicity and susceptibility are profoundly depressed or impaired; in the second, tonicity only is impaired, while susceptibility is exalted to the highest degree; and in the third, susceptibility is depressed or perverted while tonicity is but little altered; and these diverse directions taken by the primary morbid actions, develope in the progress of the disease phenomena and results still more various.

The foregoing views may be briefly stated in tabular form as follows, viz:

TABLE I.

ELEMENTARY CONSTITUENTS OF FEVER.

Elementary Properties.		*Elementary Functions.*	
1 Tonicity.	from which result in	Nerve tissue	Sensibility.
			Transmissibility.
			Innervation.
2 Susceptibility.		Contractile tissue	Contractibility.
			Mobility.
		Glandular tissue	Secretion.
		All tissues	Nutrition.
			Absorption.
			Calorification.

TABLE II.

ELEMENTARY CONSTITUENTS VARIOUSLY COMBINED GIVING RISE TO DIFFERENT TYPES OR FORMS OF FEVER.

1 Elementary properties both increased,	Exaltation of all elementary functions,	True inflammatory fever.

2 Elementary properties both depressed,	Depression of all elementary functions,	Pernicious or malignant periodical fevers and the more profound cases of Typhus.
3 Tonicity normal or diminished with susceptibility increased,	Increased excitement of elementary functions with diminished force,	True irritative fevers, including the ordinary periodical and eruptive classes.
4 Tonicity normal with susceptibility diminished,	Depression with perversion of the elementary functions,	Ordinary typhus and typhoid fever.

The foregoing is a brief outline of what I deem to be the true philosophy or essential pathology of fevers.

Though hastily written, it is the result of much patient observation at the bed-side, aided by experiments, reading and reflection. It traces, by a rigid analysis, all fevers to a common starting point; not in a morbid impression on any one tissue, like the mucous membranes, as advocated by Broussais, or the *nervous structures*, as claimed by most British and American writers, but on certain inherent and universal properties of all the tissues; which impression does not invariably consist in simple depression or exaltation of such properties as claimed by Dr. Brown; nor yet in constant exaltation, as represented by Dr. Payne, but it varies in its specific character with every variation in the quality of the cause or causes by which it is made. It is thus, that the intricate and complex phenomena of diseases, so widely different in their tendencies, complications, and results, and yet so analogous in some of their essential phenomena, may be unraveled and comprehended as clearly as any of the simpler processes of nature.

It may be thought by some that these views are founded on the exclusive doctrines of *solidism*, and that the importance of the blood, as an elementary seat of disease, is overlooked. It must be remembered, however, that just so far as the blood contains matter in an actual state of organization and possessed of vital properties, so far the foregoing doctrines apply to it as directly as to any of the solid tissues. That the condition of the blood constitutes

a very important element in the pathology of fever, and all other general diseases, there can be no doubt. But this importance consists in its relation to the solids as a universal exciter of organic action, and a ready medium, through which noxious agents may be brought, at once, in contact with all the organs and tissues of the system; a relation that links it much more closely to the causes of diseases, than to their essential pathology. As the blood is the common receptacle for all that passes into the system through the digestive and pulmonary organs, and all that is returned from the molecular changes in the tissues through the absorbents, it necessarily constitutes the medium through which all the causes of disease gain access to the human system, except such as act directly and exclusively on the nervous system. It is probable that some of these morbific agents act directly on the constituents of the blood, changing more or less their relative proportion or qualities, while others merely float in the blood as a medium for their mechanical suspension and conveyance to the organized tissues. And it is quite probable that some agents act in both ways; altering directly the qualities of the blood and still retaining their own integrity sufficiently to disturb the elementary properties and functions of some one or all of the solid tissues. There are some facts which would lead us to suppose that this is the case in regard to that agent, whatever it may be, which constitutes the efficient cause of intermittents and remittents. The rapid diminution of the red and white corpuscles in the blood of patients laboring under periodical fever, the change in the coloring matter, by which the skin is made to assume that sallow hue, so closely resembling chlorosis, and especially the fact that these phenomena are not unfrequently seen in persons who have lived constantly in malarious districts, but who have never had a single regular paroxysm of fever,—would seem to indicate the existence and action of some cause which acted directly on the blood corpuscles, independent of its further effects on the solid tissues. And it may even admit of some question whether that diminution of *tonicity* in the tissues, which constitutes an important element in the development of every case of intermittent or remittent fever, is not wholly owing to the impaired state of the blood, resulting from the action of the efficient cause on that fluid; while the *increased susceptibility*, which constitutes the other essential element of this variety of fever, re-

sults from the direct irritating qualities of the cause, in contact with the organized structures. It will be remembered that the late Dr. Drake and other writers of great experience, assign to the cause of periodical fevers, properties somewhat resembling those of the narcotico-irritant poisons; and yet it will be evident to every careful bed-side observer, that there is neither in the outset nor progress of the disease, any exhibition of a true narcotic or soporific effect.

Instead of sleep or any approach towards narcotism, there is from the very incipient feelings of indisposition to the end of the disease, a sense of debility, a feeling of lassitude both of mind and body, which renders voluntary exertion of any kind, a task, and greatly lessens the power of endurance; while at the same time there is a morbid increase of organic susceptibility. (or irritability, if the reader prefer that term,) which often renders the sleep disturbed, or prevents it altogether, and causes the patient to feel with undue accuteness every outward impression. If as most physiologists of the present day, suppose, the corpuscles of the blood are in some way connected with the absorption of oxygen, and the maintenance of the organic actions in a state of vigorous health and activity, we can perceive very clearly how an agent, introduced into the blood, which is capable of impairing the qualities of such corpuscles and retarding their development, should produce just that lassitude, that impaired tonicity or altered molecular affinity, which so uniformly characterizes the initial steps of periodical fevers. Equally clear it is, that such impairment of the blood and altered molecular affinity would speedily involve a change in all the primary functions, such as innervation, nutrition, secretion, and calorification.

Thus the nervous system would be depressed, nutrition and secretion retarded, and as a necessary accompaniment, the development of caloric would be diminished, thereby leading to a chill, varying from mere alternations of temperature to a prolonged and severe shivering.

If, at the same time, the cause thus acting on the blood and circulating with it through the whole capillary system, retained enough of its original qualities to excite or increase the elementary organic susceptibility, we should have, not the effects of a *narcotico*-irritant agent, but those complex phenomena that result from an

impairment of the natural relation between the blood and the elements of the tissues, namely, diminished *tonicity* or true debility, coupled with increased irritability or excitement. And such, it seems to me, are the actual elements that exist and constitute the developing stage of our periodical fevers. Of course, they necessarily involve an early disturbance of all the primary functions, such as innervation, capillary circulation (including nutrition and secretion), and calorification; not in regular and invariable succession, as represented by Dr. Southwood Smith, or as dependencies the two latter on the former—that is, the capillary and calorific disturbance dependent on the nervous depression, as represented by most modern writers—but the whole occurring simultaneously, though not always in an equal ratio or degree, and dependent on a common antecedent pathological condition, already sufficiently described. When the train of morbid action has proceeded far enough to involve the primary functions to such a degree as to produce the phenomena belonging to the cold stage, other disturbing elements are added, which materially aid in arresting the phenomena of depression and in developing those of excitement. Thus the very depression of the primary functions necessarily retards capillary circulation and secretion, inducing an accumulation of blood in the larger vessels and the more vascular organs, while the failure of secretion leaves it impregnated with waste matter that should have been thrown off by the skin, kidneys, &c. This now cooperates with the irritating quality of the original exciting cause, in speedily exalting the organic susceptibility to such excess as to usher in the hot or fibrile stage If the true irritating quality of the original cause be comparatively feeble, the stage of excitement will be brief, terminating in copious evacuations from the skin and other secreting or exhaling surfaces, thereby exhibiting the phenomena of an ordinary *intermittent*. On the contrary, if the original cause acts with greater intensity, or exhibits more decidedly irritant qualities, the stage of excitement will be more protracted, the secretions partial, being increased in some organs, as when the liver pours out an inordinate quantity of bile, and yet diminished in others, as the skin and kidneys, causing only a partial subsidence of the hot stage, and constituting the common remittent or autumnal bilious fever.

(*Continued next month.*)

SELECTIONS.

Editorial Correspondence of the Charleston Medical Journal and Review.

(*Concluded from last Number.*)

I saw M. Guersant, who has charge of the surgical division of the Hospital for sick children, puncture a tumour, in a girl aged six years, situated on the inner and inferior side of the thigh at its pelvic extremity just beneath the sartorious muscle, from which he drew a large quantity of pus. It was elevated, about four inches in diameter, and presented precisely the appearance and feel of a fatty tumour. It had existed for more than a twelvemonth, succeeding caries, ulceration and curvature of the spine, the pus as it formed escaping by gravitation through the femoral ring, or rather under Poupart's ligament. M. G. had removed one of these in the same way from a man in whom it had existed eighteen years. Their contents, it is well known, are enveloped in a membrane which invests the walls of the tumor, in this way preventing its exit by an artificial opening externally, while at the same time no absorption occurs. There was in his wards a case of external Balanitis in a boy, æt. 5, which had extended itself to the urethra by continuity of structure, and which exactly simulated gonorrhœa. The pus (escaping on pressure) was yellow. This condition, which proceeded simply from want of cleanliness, suggests to us how easily one may be deceived in ascribing it to the effect of actual contact. We read in the journals occasionally of very little boys, who either from extraordinary precocity on their part, or owing to the vicious interference of individuals of the other sex, suffer from diseases reserved for their seniors.

Guersant treats white swelling of knee joint (Hydrarthrus synovialis) very successfully, by passing the actual cautery over the surface, and repeating it every two days. He has invited attention recently to Cervical Rheumatism, or arthritis of the neck, a rheumatic condition of the periosteum and the deep-seated recti muscles of this region, and not the sterno-cleidomastoid as is usually supposed. It is successfully treated with the hydriodate of potash internally, and the external application of Vienna caustic. I saw two cases in his wards of individuals of six and seven years of age respectively. One of these, a boy, could not raise his head from the pillow without first supporting and lifting it with one hand. Under the course of treatment indicated above, the power over the voluntary muscles was daily increasing and the pain diminishing. I saw him during one morning visit his wards, continue a clinical lecture on tracheotomy in croup, with the exhibition of

the instruments and their mode of application—perform two operations for lithotrity in boys, æt. five and eight—cauterize an erectile tumour of face, with the needle at white heat repeatedly passed into it, in the person of a little girl of nine years of age, and operate on another for tenotomy, dividing the tendons of each foot. Chloroform was administered in each, with the exception of that of erectile tumour. In the latter there was comparatively little pain endured. M. Guersant next exhited the diseased organs of a boy æt. eight, who died of a tumour of the bladder. It had been accompanied with retention of urine for the preceding six months, and intense pain, and susceptibility upon pressure of the abdomen. The organ could not be sounded with the ordinary instrument, but required a much longer one. In and around the interior of the neck of the bladder was found a polypous-shaped encephaloid tumour, which resembled a fibro-plastic structure, not yet determined, and continuing itself along the urethra, involving the prostrate gland. The kidneys, which he had not expected to find diseased, were much altered, and resembled the spleen in its general appearance.

On the general subject of Demonstrative Midwifery (though this is not exactly it, and to give a portion of our readers some idea of the *realities* of medical life in Paris, where an individual is privately watched and publicly permitted to do as he pleases, or *vice versa*,) I will extract a passage from my note-book, as it was written on the spot: "To-day, Jan. 23, at No.—, Rue Poitevin, we are attending M. P.'s *Cours d'Accouchement*, which is open every day, Sundays and Thursdays excepted. It continues from three to four months, and each pays the small sum of twenty-five francs, including the fee of the *toucher*, with version and other obstetrical manipulating operations upon the manikin. It is a small room, filled with students and graduates of medicine, native and foreign. We have now arrived at that portion of the course devoted to the examinations, and M. P. has before us four women in different stages of gestation, and one not *enciente*, which allows of comparison. Each student in turn, touches and explores carefully the latter, under the immediate direction of the chief, and then proceed alone to examine the others. One of these informed one of us, that she received two francs for the use of her person on each occasion, and that she sometimes attended more than one room of a similar nature. M. P. is quite impressive. His subject, a rather respectable looking personage of thirty-two, is standing against the wall looking camly on, and with an occasional smile and exclamation upon the crowd of men around her eager to practice manipulations, a knowledge of, and skill in performing which, are so essential to their art. There are, also, standing or being seated indiscriminately among the rest of us, two or three well-dressed young women, denominated *Sages femmes*, who come to

learn the principles and the practice of midwifery, having before them, perhaps, as incentives, the career of their illustrious predecessors, Mesdames Boivin and La Chapelle. These smile like the rest when anything occurs through the awkwardness of some or maladresse of others. Generally, however, there is a good deal of propriety observed, though neither M. P. nor the *Eleves* seem to consider it incumbent upon them to be particularly reserved. He told subject No. 1 (*non-enciente*) not to laugh, *because*, if she did, the Monsieur could not appreciate the differences in the 'neck' as well.

A man of any sensibility, in availing himself, under the circumstances, of these opportunities to render himself more competent and skilful in the practice of certain branches of his profession, and for the benefit ulteriorly of himself and others, cannot, at the same time, but feel pity for the miserable creatures who, reduced by want, or made callous by habit, turn the peculiar condition in which they find themselves, into a means of procuring the necessaries of life, or into a source of gain.

If our readers will pardon me for the nonce, I add: verily, there might be an "Uncle Tom's Cabin" written on this and other conditions existing here, by those who are dealers and retailers in fiction; for the amount of fact really existing, would furnish quite as much foundation for just as much false sentiment, distortion and extravagance, which first captivating, then perverts and leads astray the judgement.

Of course all medical men, as well as students of medicine, who desire it, are admitted to witness and attend the deliveries which daily occur at the Clinique for this purpose at the Ecole de Medecine. The suspension of the green lantern at its front, to indicate the commencement of the throes of parturition in the females who go to seek relief, is discontinued, but only temporarily, and on account, I believe, of the epidemic of puerperal fever.

We should, perhaps, add, respecting the *Sages femmes*, that they undergo a very strict examination before being allowed to have charge of lying-in women; and they sign an obligation, under heavy penalties for its infraction, never to practice what may be denominated an obstetrical operation requiring instruments.

Although the opinion of a physiologist as distinguished as M. Coste are well known to many of the profession, yet as he is at present delivering a course of lectures at the College of France, on *Embryology*, the expression of his very latest views, even at the risk of some repetition, may not be without interest. I will, therefore, condense what I have heard him say on the subject—of which, however, he is at present on at the threshold. Of the two or three introductory lectures on the Artificial Reproduction of Fish in the Waters of France, by the external contact of the ova of the female and the fluid of the male, I send you a more detailed account.

Coste himself, Pouchet, Barry, Wagner and Baer, and we may add Prof. Agassiz, (whom our country is so fortunate as to possess as a resident,) have certainly contributed more than any others, living or dead, to the removal of the barrier existing between us and the laboratory of nature. They have beaten down more of the outworks, and penetrated deeper and farther in the attempt to surprise nature herself in one of the most mysterious and elementary of her operations. Notwithstanding, we must acknowledge that they have only succeeded in gaining the vestibule to her inner shrine, and have not yet exposed the secrets of her mechanism. M. Coste, basing his conclusions upon experiment, believes that in the higher animals, and probably in man, impregnation may take place in the ovary, but always below the second third of the fallopian tube, and not in the matrix (uterine cavity), in this respect differing from some other physiologists. In the procreative seminal fluid of the male, he recognizes the two components, viz: spermatozoa and fluid. The former are the active agents, and are found in a few hours after the congress of the sexes, in the matrix, in the fallopian tube at its fimbriated extremity, and even upon the surface of the albuminous covering of the germinative body. They can only be active in fecundating the germ within the limits indicated above—that is, at any point within the lower third of the fallopian conduit; because experiments upon, and examinations of rabbits, prove that when a germ in a female, from the presence or proximity of the male, or other natural cause, has had its surrounding vesicle ruptured, and has reached this portion without meeting the male animalcule, it has become so disorganized or modified as no longer to possess the power of constituting an individual. Mr. Coste thus demonstrated this: Female rabbits, at the period of rut (which, as well as menstruation in our own species, is nothing more than the evidence of the sympathetic irritation and peculiar state of susceptibility of an animal, induced by the rupture of a matured Graafian vesicle), were placed in the neighbourhood of the male, but not in actual contact; a period of time was allowed to elapse sufficient to bring about a rupture of the vesicle, the seizure of the ovum and its surrounding granular mass by the fimbriæ of the fallopian tube, and its transit into the matrix. If ingress was permitted to the male at any period so late as that a union between the spermatozoa, and the germ or *egg*, as it is more properly called, could not occur before the point referred to above, no conception took place. If the male was denied, to a still later period, the female lost all further desire, and would repulse her mate. Ablation of the ovaries will consequently destroy the capability of procreating, and in our own species of menstruating. Almost the only positive proof, and one well known sustaining the extension of this principle, which is deduced pretty much from comparative experiments on the lower animals, was that obtained by Mr. Per-

cival Pott, who, in extracting an abdominal tumour, took away at the same time with it both ovaries. The subject, who was within the period of puberty, sustained a change quite analogous to that following castration in the opposite sex. She never afterwards menstruated—became, in many respects, masculine in character and disposition, and also underwent corresponding alterations in her muscular system. A cat, at the period of rut, kept in the neighboorhood but free from the encroachment of the male, suffers from marasmus, unless she has been previously deprived of her ovaries. Certain viviparous fish may also be instanced, in which conception, impregnation and gestation are all conducted in the ovaries. So the ovaries are the centre or *foyer* of these emotions, induced primarily by, and attended with, a rupture of a Graafian vesicle. Sexual instincts and their incentives, are the primary cause of this rupture. This rupture gives exit to a structure endowed with unusual attributes, and intended for a wonderful purpose, which is made up of the following vesicle elements, viz: a vitellus and its membrane, a germinative body of Purkingian corpuscle, and a germinative dot.

Conception cannot be, as some physiologists believe, sudden and instantaneous. In man, the opinion is, that it requires ten or eleven days for the fecundation of the germ, and its deposit in the cavity of the uterus, the animalcule having made the traverse of matrix and oviduct to impregnate it. In tracing the progress of the spermatozoa, it may be that they reach their destination by means of the cilia lining the walls of the uterus, the extension of the same combined with a species of suction ill understood, brought about by the action of the muscles of the tube, which assist in conveying them to its distal extremity. When they have reached this point, having found a germ either in the ovaries or already at the vestibule of the tube, they are absorbed into the albumen surrounding it. This is shown by the examination of the higher animals, and is witnessed in the external generation of frogs, and specimens of the various states were exhibited. M. Coste does not agree with physiologists who describe the animalcule as penetrating into the substance of the germ itself, by a cavity or fissure. They have been led into the error by an optical deception, produced by the pressure which the preparation for the microscope gives rise to. It is by a process of imbibition simply into the albuminous covering, that it touches the *surface* of the germ. The egg, thus impregnated, is now borne upwards through the tube and into the matrix, which, in the rabbit, requires twelve hours. When it reaches this point, the changes that it has undergone are simply these: It has lost its envelope of albumen, absorbed for its nourishment, and the animalcule which had been sunk in the latter, is discovered in contact with the vitteline membrane, covering the cicatricula or germinative dot.

The presence of the animalcule is necessary to modify the germ; for, as was stated before, the latter is disorganized if, in its passage outwards, it does not meet the tribute contributed by the male below a certain point in the oviduct. The line which appears at this period on the germ, is only an indication of the commencing *segmentation*, as it is called, for the *yellow body* which is a process of development in itself. It is not, as some physiologists believe, the line of demarcation of the cerebro-spinal system.

M. Coste could find no membrane lining the cavity of the matrix, as some suppose, to keep the impregnated egg which had arrived there from falling out, or to attach it to the walls. He had examined a woman who had committed suicide after impregnation, in whom there existed simply a tumefied membrane unclosed, which was exhibited.

The American Medical Society in Paris, is generally well attended. It receives most of the journals—American and European—and, I think, is productive of much benefit. It is with much pleasure that I inform you of the honor conferred upon our distinguished fellow countrymen, Valentine Mott, M.D., of New York, and J. C. Warren, M.D., of Boston, who have been made Foreign Associates of the Imperial Academy of Medicine. Prof. Simpson of Edinburgh, among four or five others, also shared in this distinction.

Among the candidates mentioned in the Gazette des Hopitaux, for the chair of Materia Medica and Therapeutics, vacated by M. Trousseau, are MM. Grisolle, Tardieu, Pedoux, Fleury and Cazenave. For that of Natural Medical History, MM. Payer, author of the Botanique Cryptogamique, Robin, Hœffer and Martins.

The cholera is at Breslau.

I shall send you an analysis of a pamphlet on Cancer, recently published by M. Maissonneuve; and, in conclusion, I hope to date my next communication on the banks of the "yellow Tiber," or at the Pass of Thermopylæ.

From the Western Journal of Medicine and Surgery.

Relations of Vaccination and Inoculation to Small-Pox.

From a very interesting and valuable paper upon this subject, communicated to the Epidemiological Society of London, by Dr. Walter Lewis, F. G. S., we take the following extracts. The author commenced by considering the various questions in regard to this disease, of which an elucidation is now anxiously called for. He then stated numerous cases illustrative of the protective power of vaccination, and of the superioriiy of vaccination to inoculation. He then referred to the probability of the fact that measles are rendered milder by vaccination.

"Joler has described an epidemic of measles that took place in Retzat Circle, in Bavaria, in the district where he himself resided. He says that the disease was much milder among the vaccinated than among the unvaccinated; 15 in 52 died among the non-vaccinated, while barely 1 in 300 died among the vaccinated, showing that measles was 86 times more fatal among tne former than the latter."

Examples of imperfect vaccination were then dwelt upon, and the author expressed his opinion clearly and decidedly that where well marked cicatrices were not left, the operation should be accounted a failure, and should be repeated, although he owned that this was not the opinion held by many German and English physicians.

Vaccinating from re-vaccinated persons, from those who had been inocculated, and from such as had previously had small-pox was strongly denounced, as vaccinia must be extremely modified in such cases. The author added:

"When we interest ourselves strongly in the propagation of vaccination, we must guard ourselves from furnishing arms to its adversaries. And is it not furnishing them with arms to employ a virus of which we are not certain?"

A most interesting collection of cases was then read, in which small-pox had attacked the same individual three or four times; among others, the following, that had come under the author's own attention, was narrated:

"Robert D., a tradesman, living in North Audley St., had small-pox the first time at the time of his birth, his mother suffering from it at her confinement. He was attacked with the disease a second time when a boy at school, between nine and ten years of age. When 18 years of age, he took it, for the third time, from his sister, who died of it. All the attacks were severe, but the last the most so. He lost his hair and his nails, and the skin of his feet; he was blind for several days, and his life was despaired of. However, he is still alive, and not much disfigured. He was never vaccinated nor inoculated. I believe, if again exposed to the disease, he will take it again."

Cases were then adduced to show that several members of the same family appear sometimes to show great susceptibility to take the disease. The following curious case of small-pox in the lower animals was then adduced, the author adding, that any similar well attested cases would be very valuable additions to the facts collected by the Society on this subject:

"The following case was related to me by a lady of rank, on whose veracity I can place the greatest reliance. Some years ago, just after her confinement, she was seized with small-pox. It became necessary to have her breasts drawn, and, as no child could be obtained, recourse was had to a puppy, which answered

the purpose. At the usual time the puppy sickened, and had the disease known by the name of the "distemper." It is said that vaccination, when successfully performed on puppies, will almost to a certainty prove a prophylactic against distemper."

Then followed some interesting cases of individuals who could be neither vaccinated nor inoculated. The last cases adduced were of individuals who appeared to have perfect immunity from small-pox.

"I have detailed the case of Robert D., who evidently possesses a strong innate susceptibility to the action of the small-pox virus, as shown in his having already taken the disease three several times. I have now to draw your attention to a case the most directly opposite to this. Strangely enough, it is that of his own brother, Thomas. From the elder brother Robert, as well as a sister, having taken the small-pox, the parents believed that all their children must take the disease, and refused to have the subject of this case vaccinated or inoculated. He was accordingly exposed when a child to the contagion, lying in the same room with his sister, while she was suffering from the disease, as well as waiting on his brother in his second and third attacks. Although since that time he has been several times exposed to the contagion, he has never felt the slightest ill effects from it. * * * * Examples of persons possessing a natural immunity from the disease are rather numerous. Dr. Jackson of Philadelphia, saw a man at the small-pox hospital, engaged in laying out and burying the dead, who had never had an attack of the disease. He had been frequently inoculated and vaccinated, but always unsuccessfully. Van Swieten speaks of a physician, 70 years of age, who had practised through numerous epidemics of the disease, but had never taken it. Diemerbrock states that immunity from small-pox was a privilege of his family. It was possessed, he asserts, by his grandfather, grandmother, his father and himself.

The author drew the following deductions from the cases adduced:

"1. That vaccination is a most eminent protection against small-pox.

"2. That when perfectly performed it is almost, and, in some instances, more protective, than inoculation or small-pox itself.

"3. That it appears to render some exanthemata, *e. g.*, measles, milder than they would have been otherwise.

"4. That neither vaccination, inoculation, nor small-pox, guarantees the individual, in every instance, from small-pox.

"5. That small-pox attacks some persons three times, or oftener.

"6. That there exist certain individuals who have perfect immunity from vaccination, inoculation, and small-pox.

"7. That great susceptibility to, or perfect immunity from, small-pox, is sometimes found to be common to several members of the same family."

From the Western Journal of Medicine and Surgery.

Relations of Menstruation, Lactation, and Conception.

Dr. Robert Barnes, in a paper on this subject, in the Feb. No. of the London Lancet, arrives at the following conclusions, based on the analysis of the histories of 100 women:

1. Lactation exercises a considerable influence in preventing menstruation and conception.

2. This influence appears to be marked and constant in some women, and to exist but feebly in others.

3. The influence of lactation in averting menstruation or conception, cannot, for the most part, be kept up longer than twelve months.

4. There is a close relation between the occurrence of menstruation, during suckling, and conception; that is, when menstruation appears during suckling, conception is very likely to follow.

5. When pregnancy takes place during suckling, and suckling is continued, abortion is very apt to follow.

6. The chief causes of the abortions brought about during suckling, are the revolt of the ovaria and uterus, evinced by the return of the menstrual nisus, and the deterioration of the mother's blood; to which must be added, superinduced disease of the ovum.

7. The practical conclusion that weaning should be enjoined, not only whensoever pregnancy takes place, but also whensoever menstruation returns.

From the Archives Generales de Medecine. Med. Examiner.

Dr. Bernard's Experiments on the Elective Elimination of certain Substances by the Secretions.

Dr. Cl. Bernard has written a very interesting account of certain experiments made by him "on the elective eliminaiion of certain substances by the secretions, and in particular by the salivary secretion." He remarks *in limine* that this secretion has not been examined with the same care as the urine, bile, milk, etc., in regard of the circumstances alluded to; and that it remains to be explained how the saliva chooses some, while it rejects other substances equally soluble in it. He performed two sets of experiments, which were ingeniously contrived and carefully repeated.

In the first series of experiments he injected into the right jugular vein a solution of yellow prussiate of potash, of iodide of potassium, and of grape sugar, and immediately thereafter he detected the second substance in the saliva, but neither of the other two; while in the urine the prussiate of potash could be detected, but neither the iodide nor the sugar. Twenty-five minutes after the injection, abundance of the prussiate of potash was found in the urine, only a trace of sugar but still no iodide. The saliva remained as before. The secretions were tested every half hour, but no change occurred till the end of two hours from the time after injection, when the iodide of potassium at length appeared in the urine. Neither the prussiate nor the sugar appeared at any time in the saliva, which eliminated only the iodide of potassium; and it is worthy of remark that this salt appeared immediately in the saliva, while it was not detected in the urine for two hours. When, however, the solution of the iodide was stronger, it appeared sooner in the urine, though never within the hour.

In the second series of experiments, M. Bernard injected these three substances in solution, severally into the veins of the same animal at different times, as well as into the veins of different animals, and he always found that they comported themselves in exactly the same manner. Such was the case, likewise when they were introduced into the stomach. Both grape and cane sugars, like the prussiate of potash, never appeared in the saliva, while they were eliminated more slowly by the urine. This observation seemed to contradict the assertions of some authors, regarding the saliva of diabetic patients, but on actually testing this secretion in 'la Charite,' M. Bernard found that there was no trace of sugar in the saliva, while however, it could be detected in the expectoration from the bronchi, of such patients as had phthisis combined with diabetes. Neither sugar nor prussiate of potash would seem to pass into the bile, or into the pancreatic juice, in ordinary circumstances, but when sugar was strong in the blood, it was found in the bile, but never in the pancreatic juice.

In regard to the elimination of sugar from the economy, M. Bernard has noted a very curious fact, viz., that though the mammary secretion naturally contains a kind of sugar, it does not allow either cane or grape sugar to pass by it. Sugar of milk is much more difficult of fermentation than other kinds of sugar, and may thus be distinguished from them.

When the iodide of potassium was injected into the vein of a dog, or introduced into its stomach, it could always be detected in the saliva within forty seconds. It also passed with rapidity into the tears, and into the pancreatic juice, while it passed with

much greater slowness into the bile, in which it was often difficult of detection.

M. Bernard also injected lactate of iron into the veins of dogs, and never found it eliminated by the saliva; in which respect it agreed with the sugars and prussiate of potash. When iodide of iron was carefully injected into the vein of a dog, both iodine and iron were found in the saliva. In another dog, a solution of the iodide of potash was introduced into the stomach by a fistulous opening, and afterwards another solution of lactate of iron; both substances were thereafter detected in the saliva, showing that the iodine gave to the iron the capability of being eliminated by the saliva.

M. Bernard at present merely wishes to call attention to these interesting facts, and does not offer any explanation of them. But the property which certain substances seem to possess, of being eliminated by different secretions, is not their only peculiarity. Their period of sojourn in the economy is also importantly different. Thus, M. Bernard remarks that the iodide of potassium and other substances, perfectly soluble, and really dissolved in the blood, remain for a certain time within some of the organs of the body; and he finishes his paper with the following account of the experiments made by him, in order to investigate this sojourn of the iodide of potassium in the animal economy. He introduced into the stomachs of several dogs, which had permanent salivary and biliary fistulæ, a solution of two grammes of iodide of potassium. The same day the urine of these dogs exhibited the reaction of the iodide; next day it could be detected neither in the bile nor in the urine; and on several days following, no trace of it was found in these secretions. It seemed to be completely eliminated from the system; but examination of the saliva showed its presence still. The gastric juice also contained the iodide, both because it contained saliva, and also because it was furnished directly with it from the mucous membrane of the stomach. This persistence of the iodide in the saliva and gastric juice continued for three weeks, and possibly it may have continued longer. Purgatives have a great effect on the sojourn of the iodide in the economy; indeed, so much is this the case, that if purgatives were employed, soon after the introduction of the salt into the stomach, a few days sufficed for ts total disap pearance from all the secretions.

In concluding, M. Bernard observes, that these experiments show that substances which are soluble, and capable of circulating in the organism without producing mischief, present two sets of phenomena worthy of remark.

"1st. Some substances never pass into certain determinate secretions, *e. g.* the yellow prussiate of potash, cane and grape

sugars; others show themselves in all the secretions, only with greater or less rapidity, *e. g.* the iodide of pottasium.

"2d. Some of these substances are eliminated completely and rapidly from the economy, *e. g.* the yellow prussiate, sugars, &c.; while others are only *partially* eliminated by the urine, and may remain in the organism, showing themselves in other secretions for a longer or shorter time. The iodide of potassium offers a remarkable example of this prolonged sojourn of soluble substances in the organism,—a sojourn which, in the case of that salt, is prolonged, because the portion not eliminated and re-appearing in the saliva, instead of being expelled from the system, is constantly thrown back into the stomach, whence it is taken up by the circulation, and returned to the saliva, and so on.

"The chief conclusion," he continues, "to be drawn from this work is, that one cannot refer to any general law, the manner in which these substances act in the organism. The experiments made on one saline substance, can teach nothing regarding another: no one could have foreseen, for example, that the iodide of potassium, and the yellow prussiate of potash, salts equally soluble, should offer, in respect of their passage into the secretions, and of their elimination from the body, differences very striking. Special researches on each particular substance are necessary in order to establish physiological history, which ought to be intimately connected with its mode of action as a therapeutic agent."

On the Pathology of Asphyxia. By THOMAS JOHNSON, M. D., late Professor of Anatomy in the University of Virginia.

THERE is probably no term whose literal meaning conveys so little idea of the pathological conditions classed under it, as asphyxia. Syncope is accompanied by a cessation of pulse; yet there is a marked difference between the two affections, which is obvious to the most superficial observer.

Physiologists are agreed, that of all the injurious accumulations in the blood, that which takes place with the greatest rapidity, is carbon, or carbonic acid. To separate this noxious ingredient from the circulating mass, and to supply it with the vivifying principles of the atmosphere, is a work which must go on unceasingly. The largest gland in the body of vertebrata, though subservient to other important functions, is also actively separating carbon from the blood, by throwing it into innocuous combinations, thereby assisting the pulmonary organs in no inconsiderable degree. But it is evident, any circumstance which interrupts the atmospheric air into the lungs, increases the carbon in the blood; at the same

time, this vital fluid, by the exclusion of oxygen, is deprived of a stimulus essential to the vital actions of the general tissues. If there is not a due balance kept up by a normal respiration, between that act and circulation, animal heat, nutrition, secretion, absorption, innervation, in a word, every vital action, feels the influence.

There are two general causes of the asphyxia; the first, mechanical, comprehending such agents as prevent the æriform medium in which we live from entering the air-cells of the lungs; and the second, chemical, including those gases which are destructive of the respiratory act, whether from the deficiency of oxygen in their composition, or from their positively deleterious properties.

It is a well established fact, that reptiles and the invertebrata, as well as hybernating mammals, require less oxygen to support life than the birds and the mammalia in general. The cetaceæ, though mammals, are enabled to remain under water an hour or more, because their arteries and veins lie in contact with large diverticula, filled with red blood, which is absorbed and taken into the circulation from these reservoirs during submersion. The respiratory function in man ceases in less than five minutes after the complete exclusion of atmospheric air, and the circulation in less than ten minutes; but the habit may prolong this period, as is incontestibly proven by Ceylon pearl divers. Reanimation of still-born infants has been known to take place half an hour after the resuscitating means were resorted to.*

Too frequent respiration of the same air as surely produces asphyxia as the breathing of carbonic acid, though not so quickly.—The horrors of the Black Hole of Calcutta, in 1756, must be familiar to every one, where 146 persons were confined for a night, in a badly ventilated room, only 18 feet square. The next morning, only 23 of the prisoners were alive, and it is said, (mark the observation,) most of these subsequently perished of "putrid fever."

Whether what are termed *Zymotic* diseases depend in reality upon a fermentable material or not, may be disputed; but certain it is, that an inferior degree of pulmonary and cutaneous exhalation is a most potent predisposing cause of choleriform and typhoid affection. When air is confined and frequently respired, it becomes loaded with carbonic acid and putrescent exhalations from the body, and is finally offensive to the smell. How can we doubt that such

* Twelve years ago, I attended a negro woman, who was delivered of twins. The last child was still-born, and I tried fifteen or twenty minutes to resusciate him, unsuccessfully. An old negress then applied her mouth to the child's, I holding his nose, and at regular intervals pressing the abdomen and thorax, so as to imitate the respiratory action of these parts. In five minutes the child cried lustily.

For interesting cases of this kind, and those from drowning, see Marc, *Manuel d'Autopsie Cadaverique Medico-Legale*, p. 152, et seq.

an atmosphere is a cause of zymotic diseases? Whilst complete oxidation of effete matters eliminates them in the form of carbonic acid and water, leaving urea and other highly oxidized products to pass off by the kidneys, an imperfect oxidation will convert them into peculiarly offensive products, such as those which characterize fœcal excretions and imperfectly formed bile.*

The reports of boards of health uniformly attribute the spread of zymotic diseases to overcrowding and insufficient ventilation. We observe the prevalence of these affections in prisons, in ships, in camps, poor-houses, factories, &c. It is in such situations that cholera, asphyxia, and typhoid fever rage with the most terrible malignancy. The same effect is observed when the atmosphere is contaminated by the evolution of carburetted hydrogen from marshy soils. The history of the cholera at Kurrachee in Scinde, where an army of 6380 men was decimated in an incredible short space of time, strongly confirms this view.† Watchfulness, the influence of warm climates, and prolonged muscular exertions, by well known physiological laws, cause not only imperfect aeration of the blood, but the most noxious cutaneous exhalations.

From these considerations, it will appear that the subject of deficiency of proper respiratory material is of the deepest hygienic interest to the public generally, as well as to the pathologist.

Asiatic cholera has been most appropriately termed cholera asphyxia, for partial asphyxia is a most prominent and invariable symptom of the disease. The blood drawn from the vein of a cholera patient is dark, thick, and grumous; and the arterial blood is as black as ordinary venous blood. This is precisely the condition of the blood in asphyxia from submersion or strangulation. It is to be remembered that the functions of the liver, a powerful decarbonizing organ, are immediately suspended in severe cases of cholera.

The phenomena of asphyxia can be best observed where they gradually occur, as in the partial obstruction of the air-passages, produced by pneumonia and similar affections; for, where they succeed each other rapidly, as in strangulation, they do not admit of accurate observation. Dr. Carpenter very properly divides them into three stages or degrees. The first commences with an increase of the *besoin de respirer*, which may increase to a most distressiug extent. Involuntary and most powerful efforts of the respiratory muscles respond to the wants of the system, and if aeration does not occur, the agony becomes intense, succeded by vertigo and insensibility.

When this insensibility is complete, the respiratory movements become irregular and convulsive, the contenance is livid, the nos-

* Carpenter. *Principles of Physiology, p. 539.*
† See *British and Foreign Medico-chirurgical Review.*

trils dilate, the lips are of a deep purple, the veins turgid, and the eyes seem starting from their sockets. This is the second stage. The pulse at the wrist is now almost extinct, and the heart pulsates languidly. Soon the animal functions are suspended; no muscular movements are observed, and the sphincters begin to relax.

In the third stage the irritability of the voluntary muscles is gone, the individual falls powerless to the ground, but still the heart contracts feebly, though unable to force the blood into the systemic arteries. The general surface now becomes livid; a characteristic violet hue of the hands and feet is observed; purple spots appear upon other parts of the surface; cadaveric rigidity takes place tardily after the organic functions have been entirely suspended.

It is an indisputable fact, that the change from venous to arterial blood, is effected in the pulmonary capillaries, and there the sagacity of Haller fixed the seat of asphyxiation, though he was probably wrong in supposing the stagnation to depend merely upon a mechanical impediment to the motion of the lungs. If an animal is asphyxiated by breathing the irrespirable gases, the air-cells remain open, and there is no direct obstruction to the free flow of blood through the pulmonary structure; yet, here we observe nearly the same phenomena as if it had been submerged or strangulated. Nor does death, under the circumstances of asphyxia, proceed from the want of the arterial stimulus in the left side of the heart; for Bichat has experimentally proven that the presence of venous blood, is sufficient to keep up the action of both sides of the heart: besides, the facts connected with hybernating animals, whose blood is almost purely venous, during hybernation, is opposed to such a theory. Bichat ascribed the cessation of the circulation to diminished irritability of the heart, resulting from the deleterious effect of venous blood upon its vital properties, an effect which he proved this fluid to exert on the excitability of the nervous system.* That the circulation of venous blood upon the nervous centres, acts powerfully in arresting the circulation, I cannot doubt, notwithstanding the experiments of Dr. Kay prove that the circulation of venous blood through the muscles is not destructive of *their* irritability.† But it must be borne in mind, that an interruption of the chemical changes, or aeration in the pulmonary capillaries, is the primary cause which leads to the stagnation or engorgement in these capillaries; hence, if these chemical agents be renewed before organic life becomes extinct,

* See Carpenter, Legallios and Bichat.

† See *Recherches sur le retablissement de l'irritabilite musculare*, by Dr. Brown-Sequard. It is there proven, from experiments on criminals, that muscles affected with cadaveric rigidity, regain their irritability upon the injection of venous blood into their vessels.

the vital actions may be renewed in the organism. The right side of the heart, according to all observation, in cases of asphyxia, will soon cease to act from over-distension of venous blood which accumulates in it; whereas, the left side speedily ceases to act from a deficiency of blood, the pulmonary veins having ceased to afford a supply to it. These opposite conditions of the heart, are always found to exist where death has resulted from slow asphyxia.

All injuries and diseases which terminate in coma, occasion death by asphyxia, a principle which leads to important practical results; for, if there be no organic lesion of the nervous centres, and the stupor is temporary, life may be preserved by a long-continued artificial respiration. In cases of narcotic poisons, and convulsions in children, this practice has been followed by successful results, and as Sir Benjamin Brodie remarks, is now one of the established facts of our profession. Observation of the progress of the symptoms of typhoid fevers, induces me to believe, that the coma and organic lesions of the brain, which are developed in their course, is the result of partial asphyxiation; for, where post-mortem examinations show lesion of the brain, or its meninges, dyspnœa has been a prominent symptom of the case, and has uniformly preceded cerebral disturbance.

Strangulation, as every one knows, is a violent compression of the neck by a ligature, or other means, and whether it be by suspension, the garotte, or otherwise, the impediment to respiration may be partial or complete. If the ligature is only applied to the trachea, death occurs from asphyxia; but if the jugular veins be compressed, cerebral congestion or apoplexy ensues. Any one who will reflect upon the functions of the parts involved, and the nature of the mechanical application, must be convinced that in strangulation, both of these conditions usually occur together. Casper observed, that in 106 cases of strangulation, apoplexy took place in nine; asphyxia alone in fourteen; both conditions, in sixty-two; while the remaining sixteen cases were not examined.

A vulgar prejudice exists, that hanging by the neck often produces dislocation or fracture of the cervical vertibræ. It is remarkable that neither Casper, Remer,* or Fleishmann, mention any such occurrence. When we consider the anatomical structure of the neck, and reflect upon the number and strength of the muscles and ligaments which firmly bind the cervical vertebræ together, we would naturally infer dislocation or fracture to be a very rare accident in death by suspension. Although I have had some opportunities for examination of cases of death from suspension, I have never seen either of the conditions just referred to.†

* *Annales of Hygiene.*

† Persons who have been recovered from attempts at strangulation, suppose it to be a very easy mode of death. The symptoms which precede insensibility are, according to such testimony, rather pleasurable (!) than painful. A lady, who

In death by submersion, water is often found in the air-passages of the lungs, acting as a mechanical obstruction, and affording a greater or less impediment to the entrance of air to the cellular tissue of these organs; but this cannot properly be considered a proximate cause of death, for, frequently, autopsies show this condition to be absent, and it would require a considerable quantity of fluid to entirely impede the pulmonary circulation, in the manner described by Dr. Southwood Smith. Nor does the partial collapse of the lungs, so much insisted upon by some authorities, even when it exists, account for the rapid death which supervenes upon complete immersion.

One of the consequences of asphyxia, (though as we have already shown by means of a primary one,) is congestion of the cerebral veins. This occurrence is pretty uniform in death by drowning, but it cannot be regarded the proximate cause of death, inasmuch as it is only one of the consequences of that stagnation of blood in the lungs, which affects so injuriously all the vital offices of the system. However, that death is sometimes produced exclusively by congestion, in cases of submersion, I am not disposed to deny.

The principal cause of death in the greater number of cases of submersion, is from asphyxia, induced by the supply of atmospheric air being cut off from the lungs, thus preventing the æration of the blood in the air-cells of those organs. In the act of drowning, most of the atmospheric air is expelled from the lungs before final sinking under the water, especially if that medium be cold, but still some air remains in the air-cells and bronchi. This soon becomes contaminated and is rendered unfit for respiration by the evolution of the deleterious carbonic acid gas.

In simple asphyxia, rapidly induced, the general lividity of the body is quite characteristic; though it may be absent in cases of drowning. When the patient has been strangled, deep livid spots, resembling ecchymosis, are usually observed upon the face, neck and upper part of the chest. The face has a distressed expression, the eyes are prominent and the pupils dilated. The right side of the heart and the great veins are congested with a semi-fluid black blood, whilst the left side is comparatively empty. The large organs, as the spleen and liver, are engorged with venous blood, and so are the mucous membranes, which sometimes exhibit ecchymoses. This pseudo-morbid appearance on the mucous surface of the stomach of a subject recently hanged, was mistaken by Yellowby for the characters of inflammation, and this case has been,

tried the trick of suspending herself by the neck from a bed-tester, says, the first sensations are very much like those produced by taking chloroform. In her case, she experienced a brief vertigo, some pain on the top of the head, pain of the epigastrium, tinnitus aurium, and flashes of light before the eyes; all of which were soon relieved by complete insensibility.

singularly enough, appealed to, by the opponents of Broussais, as a refutation of his doctrines of gastritis. To the practised eye, ecchymosis no more resembles inflammation than it does mortification.

The brain, the root of the tongue, the mucous membrane of the bronchi, and the lungs, are discoloured by venous turgescence. The lungs themselves, says Carpenter, in his admirable Essay on Asphyxia, if not previously diseased, are generally distended, and expand so as to meet over the pericardium. When exposed to view, they present a dark brown, sometimes almost blackish hue externally; but their parenchyma exhibits a redder tint when cut into. The engorgement is here in the pulmonic arterial system; but it is occasioned by the accumulation of venous or black blood, of which, large, dark, thick drops flow out when incisions are made in the substance, and slight pressure employed.

The anatomical characters of strangulation by hanging have been well summed up by Taylor, (*Medical Jurisprudence*, vol. 1, p. 165.) These are lividity and swelling of the face, especially of the lips, which appear distorted. The eyelids are swollen and of a bluish color; the eyes red, projecting forwards, and sometimes forced out of the orbital cavities; the tongue enlarged, livid, and compressed between the teeth, and frequently protruded. A sanguineous froth about the lips and nostrils. A deep and ecchymosed impression around the neck, indicating the course of the cord, the skin sometimes being excoriated; laceration of the muscles and ligaments of the hyoideal region; laceration or contusion of the larynx, or upper part of the trachea. There are, commonly, circumscribed ecchymosed patches, varying in extent, about the upper part of the trunk, with deep livid discoloration of the hands and feet, and a violet tint of the nails. The fingers are generally much contracted, or firmly clenched, The urine, the fæces, and seminal fluid are sometimes involuntarily expelled at the moment of death. The body is, *cæteris paribus*, a much longer time than usual in parting with its heat. Most of these signs are observed on the bodies of persons who have been hanged, but it is remarkable how many of them may be absent.* The countenance of suicides frequently presents the traits of the most undisturbed placidity, whilst the countenance of criminals, who have been executed, or of persons who have been murdered, exhibits great distress or even distortion.

> "But, see, his face is black, and full of blood,
> His eyeballs farther out than when he lived,
> Staring full ghastly like a strangled man:
> His hair uprear'd, his nostrils stretched out with struggling;
> His hands abroad displayed, as one who gasp'd
> And tugg'd for life, and was by strength subdued."
>
> (*Henry VI., Pt. II., Act 3, Scene 2.*)

* See a remarkable case of suicide related by Esquirol, *Maladies Mentales*, Tome II, p. 844.—[Ed.

In cases of submersion, where simple asphyxia has been the result, the face is either pale, or a slight livid tint is observed; but the hands and feet are usually discolored. As Carpenter remarks, "the appearance of the surface will greatly depend upon the duration of the immersion, and upon the length of time during which the body has been subsequently exposed to the air." The pupils are dilated, and the eyelids half open; a mucous froth about the mouth and nostrils; the tongue pushed forward against the teeth. The bronchial mucous surface is generally injected, but the air-passages do not usually contain more than a spoonful of water. The lungs are gorged with black fluid blood. If the body has been long immersed, the stomach becomes filled with water.

When syncope has been the cause of death, in drowning, the surface is pale and almost in a natural condition. The trachea sometimes contains a little water, but no froth; the lungs are sometimes collapsed, but never preternaturally distended. The brain is seldom apoplectic, though there may be some cerebral engorgement.

It is scarcely necessary to observe, that the first thing to be done in the treatment of asphyxia, is to remove the cause, since, if it continues to exist, all efforts at relief must be unavailing. When the respiratory function has not entirely ceased, the patient, usually, is easily restored by free exposure to the air, and keeping the surface of the body moderately warm; but where these have been suspended, more energetic measures must be resorted to. As artificial respiration is the most powerful means for the restoration of suspended animation, it must be employed without delay. The chest and abdomen should be compressed so as to diminish the cavity of the thorax, thereby expelling as much as possible the contents of the air passages, and then the thorax is allowed to regain its natural size by its own elasticity. This should be repeated 15 or 20 times a minute. Whilst this process is in operation, the lungs should be inflated to ærate the blood which has become stagnant in the pulmonary capillaries.

In addition to artificial respiration, stimulating agents are to be employed. Artificial heat, not exceeding 98°, should be applied to the surface of the body. The warm bath and warm applications to the epigastrium are of great importance, especially after submersion, in restoring the natural temperature of the body. Frictions with warm flannel and rubefacients will be found useful, after the warm bath. Moderately stimulating fluids may be injected into the stomach or rectum with advantage. Electric shocks through the region of the heart has been known to excite it to action, even after the case has been abandoned as hopeless. (See Dr. Ure's interesting cases, in the Glasgow Med. Jour.)

Where the jugular veins are much distended, they should be emptied by an incision with a lancet, thereby relieving the brain

and heart of an oppressive engorgement. However this remedy should be applied with great caution, for reasons which must be obvious to every practitioner.

The consideration of asphyxia in relation to hygiene and medico-legal questions is of great importance, but as these are extensive subjects, I purpose recurring to them at a future period.

From the London Lancet.

On the Influence of Posture in the Treatment of Epilepsy. By Dr. MARSHALL HALL.

WE have only to raise one hand and arm high above the head, and allow the other to hang down, for a minute or two, and then bring the hands together and compare the syncopal condition of the former with the apoplectic condition of the latter, to form an idea of the influence of posture in the treatment of diseases consisting of affections of the circulation, especially that of the head.

I believe ordinary syncope may pass into fatal sinking if the raised posture be continued.

I believe that simple apoplexy may become deeper and deeper, simply from the opposite course of retaining the patient in the recumbent position.

Sleep, which is a sub-apoplexy, may pass into epilepsy or apoplexy, solely from the fact of a recumbent position. As a preventive of epilepsy and apoplexy during sleep, it is of the utmost moment that the patient should habitually repose with the head and shoulders much raised. For this purpose both bed and mattress should be raised by means of a bed-chair, or triangular cushion, and the patient be prevented from sliding down in the bed by means of a firm bolster, four inches in diameter, placed under the sheet, under the front of the ischia. The trunk should be raised to an angle of 45 or 50 degrees.

In this manner the encephalon will be less oppressed with blood, the sleep will be lighter, the disposition to epilepsy or apoplexy will be diminished.

This should be the patient's habit during the rest of life.

There are two other circumstances in which attention to posture is most important.

The *first* is the condition of the patient after certain fits of epilepsy, the respiration being impeded by *rattles* in the throat. The posture should be much raised; but, besides this, it should not be such that the saliva may *fall* into the fauces. The stupor and insensibility prevent the patient from swallowing. The saliva, therefore, if a just position be not adopted, accumulates and falls into the fauces, and a throat-rattle and dyspnœa, painful to witness,

and dangerous to life, are the consequences. The posture of the patient should be such as to allow the saliva to flow out of the corner of the mouth. In one case such a change of posture relieved the patient immediately.

The *second* case requiring extreme attention to the posture of the patient is that of *Syncopal Epilepsy*, or that form of epilepsy in which there is ghastly pallor of the countenance and other signs of syncopal affection. The patient should be placed with the head *low*. If this be not done, the syncope may be speedily fatal, an event which actually occurred in an interesting case a few days only ago.

The patient was no other than Ann Ross, on whom Mr. Anderson had performed the operation of tracheotomy. Her fits had changed from those of the epilepsia *laryngea* to the abortive form. The reader may remember that the patient's age was thirty-six; that her case was hereditary, her father having been epileptic; and inveterate, her fits having recurred during twenty-four years; and that she herself was thin and pallid. She was seized with syncopal epilepsy; was laid on the bed and expected to recover as formerly; was left; and was at length found to have expired. A low position and proper attention might have saved the poor creature's life.

I need scarcely observe, that what I have said of epilepsy, applies to many other diseases. It is the *principle* of position which I wish to enforce; a principle, the importance of which I believe to be still greater and still more extensive in application than is generally imagined.

From the Gazzetta Medica Toscana, p 44.—Dublin Quarterly Jou^r., Feb. 1853

On the action of the Subnitrate of Bismuth. By Dr. Filippo Lussanna.

The subnitrate of bismuth, a medicine already well known, has been lately used with new indications and pharmacological applications. Notwithstanding the fear which previously existed of its local caustic action. Monneret has recently recommended it in large doses as a topical (internal) anodyne in various gastro-intestinal affections, gastralgia, diarrhœa, dyspepsia and cholerine. He, following the fashion of many of his countrymen, ignored almost every general action of this preparation, and declared that its therapeutic efficacy is purely local, and that, far from being irritating, it is absorbent and calming. Monneret has rendered much service to science, by destroying, so far as this remedy is concerned, the Orfillian scare-crows which still not a little impede the rational interpretation of pharmacological facts. But, at the same time, I do not believe that all his deductions are correct and true,

when he entirely denies the general effects of this metal. Following his directions, I have administered the subnitrate of bismuth in the large doses given by him. The patients so treated were affected with tubercular diarrhœa, the consequence of chronic enteritis, gastralgia of long standing and mesenteric disease. From the study of the effects of this remedy, I have been able to deduce the following inferences,

1. It is true that it does not give rise to intestinal irritation.
2. I have not seen it arrest tubucular or mesenteric diarrhœa.
3. The fæces always acquired a blackish-yellow color, owing to the unassimilated portions of the medicine being converted into sulphuret of bismuth by contact with the sulphuretted hydrogen of the fæcal masses.
4. The excrement, although still presenting the character of diarrhœa, was always rendered less liquid in consequence of admixture with the powder.
5. The subnitrate of bismuth is in part assimilable, and some portion of the large quantity swallowed is really dissolved and absorbed. This takes place with many other medicines, of which only a portion can be dissolved or absorbed, while the remainder passes unacted on, when the remedy has been given in large doses, through the intestine. Such is the case with calomel, iron and kermes, among metallic preparations.
6. The assimilation of the subnitrate of bismuth is due to the acid action of the fluids of the stomach, which render it soluble. Any portion that reaches the intestine, whether undissolved or dissolved, cannot be digested or absorbed, because the alkaline chlorides of the intestinal tube have no solvent effect upon it, and precipitate it if dissolved. In this second point of view, Monneret would be quite right in denying the effects of this salt on the economy in general, and in denying its absorption. The subnitrate of bismuth is soluble in acidulous matters, and, consequently, can be digested in the stomach. Thus we can understand how Trousseau and Pidoux, who were also ignorant of the general action of the salt, should, notwithstanding, caution us against administering it when gastric affections are attended with eructations,—in which, say they, "the medicine almost always fails," since, by rendering it more soluble and assimilable, the presence of medicine developes its dynamic action.
7. The non-appearance of the subnitrate of bismuth in the urine does not exclude the possibility of its having been introduced into the circulation. In fact, the subnitrate, having entered the current of blood, is, by the action of the alkaline chlorides of the serum, restored to the state of an insoluble subsalt, and thus becomes incapable of passing off by the uriniferous emunctory.
8. The effects of bismuth thus introduced into the economy are colliquative and scorbutic. The patient acquires a leaden aspect,

the eyes become sunken, and present a livid subpalbebral circle; the breath is rendered offensive, the gums swell, grow livid, and discharge a sanious blood; hemorrhage is easily excited, and sometimes profuse passive hemorrhages arise. I had once under my care a case of a dangerous and repeated epistaxis produced by it in mesenteric tuberculosis. Sometimes blood is seen in the expectoration; finally, the alvine dejections are occasionally melenic. Everything announces a solvent action on the globulin, similar to that produced, according to the experiments of Dumas, by the chlorides of potassium, sodium, and ammonium, which dissolve blood corpuscles. It might be classed among Miahle's fluidifying agents.

9. Therefore, when we wish to prevent the absorption, or the true medical action of the subnitrate of bismuth, to localize its action, and produce none but its mechanical absorbent effects, the rational mode will be to precede or accompany its administration by the exhibition of an antacid, as, for example, calcined magnesia, so as to neutralize and fix the solvent acid gastric fluids. And this, of course, will also be the chemical antidote of the preparations of bismuth, with the view of preventing their assimilation, while the preparations of iron and stimulants will be useful in counteracting their general or dynamic effects of producing scurvy, —fluidifying and dissolving the hematin.

From the American Jonrnal of Pharmacy.

Letter of Orfila to the Director of the School of Pharmacy of Paris.

PARIS, Jan. 1st, 1853.

MR. DIRECTOR AND DEAR COLLEAGUE:—Thirty-two years as an examiner in the Special School of Pharmacy of Paris, has enabled me to appreciate the distinguished merit and the honorable zeal of its professors, as well as the remarkable aptitude of most of the candidates who have assiduously followed their instruction. I will preserve, while I live, a grateful remembrance of the happy relations which have unceasingly existed between you, your colleagues, and myself, and I am happy in feeling able at this time to furnish you a proof of the desire which animates me, by contributing some little to enhance the renown of an institution which is honorable to France, and of which you are the worthy director.

I place at your disposal an inscription of 500 francs per annum in the three per cents, designed to found a prize of 1000 francs, which shall be awarded every two years, dating from the commencement of the session for the year 1856.—This inscription represents a sum of 14,000 francs, (at 84 the cost price.)

The prize is not to be divided. If it is not awarded, the same

question is to be again put up for competition, and the prize will be then 2000 francs. If the prize is not gained the second time, the same question will be proposed for the third time, the prize being 3000 francs; if, notwithstanding the delays, the question has not been properly answered, and the prize not adjudged, the sum of 3000 francs is to be paid in to the treasury of the Association of Physicians of the department of the Seine, which I founded in 1853.

Allow me, Mr. Director, to state briefly a certain number of questions, which, in my opinion, should be first proposed.

1st. To extract from the most important compound medicines all the proximate principles, or other active substances belonging to them. We should not believe, because an alcaloid, or any other body possessing a degree of power, has been obtained from a drug, that science can do no more; in fact, a substance extracted from a medicine, may account for a certain portion of its therapeutic effects, but often many other effects are due to ingredients not isolated. It is necessary to be quite certain in this regard, that all which relates to the action of compound medicines on the same animal economy may be completely understood, and the part which the different active principles take in this action ascertained. This question will furnish, without doubt, a number of subjects for prizes.

2d. To determine, by experiment, what are the substances in the several kingdoms which should never be associated in the same formulæ, because they decompose each other, with products completely inert. To ascertain, on the contrary, which are the substances, which in combining and in decomposing, yield medicines gifted with a certain activity useful to the physician. To indicate the kind of changes that occur in these various substances, and the nature of the new compounds formed.

3d. To explain the best process for discovering certain sophistications which have not yet been the object of serious study.

4th. To decide what modifications certain drugs, of vegetable and animal origin, will undergo by continued exposure to heat and light, and to dry or moist air, etc., and to say whether the products which result from the alteration of these drugs will cause accidents, in case they are employed in medical practice.

5th. To analyze the saliva, the urine, and perspiration in the principle acute diseases called specific, so as to be able to state the changes that occur in those fluids; added to which, the expired air should be examined.

6th. To search if, in lying-in women, the milk partially abandons the galactiferous organs, and is carried to other vessels, and especially if, in the so called milk diseases, to which women recently confined are sometimes subject, the milk has been carried to the bladder, into certain serous cavities, &c.

7th. To submit the mineral waters, yet but little known to ana-

lysis, and to restudy those which enjoy great celebrity, with the object of ascertaining whether some new active substances cannot be discovered. If the problem proposed by the Academy of Medicine, in 1851, on the occasion of the Capuron prize, has not received a satifactory solution, it may be removed from competition.

Such, Mr. Director, are the questions which need elucidation. The demands of science will lead you, I have no doubt, to propose other questions, either before or after those which have been indicated. I am satisfied of the sagacity of the Professors in this matter, and accept in advance the programme they may offer.

Receive, my dear colleague, the assurance of my distinguished consideration and affectionate regard. ORFILA.

From the London Lancet.

On Cramp or Spasm. By P. J. MURPHY, M. D.

CRAMP is a sudden, involuntary, complete, and painful contraction of a muscle. All the voluntary and some of the involuntary muscles are liable to these contractions. Spasms is the term usually employed when this painful affection seizes on an involuntary muscle; of the latter class the most common sufferers are the heart and the uterus; the uterus can suffer spasms when enlarged only. It is questionable whether muscles of canals, or even those of the bladder, can suffer to such extent from spasmodic action as demands medical treatment.

The involuntary contractions of muscles may vary in degree, from the painless form of subtultus tendinum or chorea, to the excruciating tortures of tetanus or epidemic cholera. The remote causes are various and dissimilar—irritation of the spinal chord; of the medulla oblongata; of the peripheral extremity of a nerve, mechanical or pathological; disease within the cranium, or a poison, as ergot of rye, circulating through the vessels. Involuntary contractions, attended with insensibility, are termed convulsions. The observations here refer solely to what may be called local cramp or spasm, originating in, and restricted to one muscle, as observed in the gastrocnemius; in the uterus, as after-pains; and to that alarming spasm of the heart, angina pectoris.

Cause.—The immediate cause of local cramp would appear to be *a languid circulation in the veins which traverse the substance of a muscle.* This theory will explain why cramps attack most frequently the voluntary muscles furthest from the organs of circulation—the feet and legs; why they are more common in cold weather; why the principal sufferers are females, especially those with weak pulse, pale countenance, and chilly surface, and therefore why they are so seldom absent in chlorosis. It will also

explain why the seizure is most usual in the horizontal position, when muscular action, so favorable to the circulation, has ceased. Nearly one half of the young, growing females, with a tendency to chlorosis, suffer from this annoying complaint; and it is remarkable, that although we have many cases where the cramps are limited to the muscles below the knee, we meet with none where the remark will apply to those above the knee. No inquiry being made about this symptom, it is seldom mentioned to the physician, and yet it is almost pathognomonic of an enfeebled action of the heart, from which the anemic headache springs. When this affection is complained of, whether in the aged or the young, no matter of what sex, the necessity for chalybeates is indicated. Dr. Brady makes one proper exception—in cases of pregnant females, but the cause of their languid circulation is mechanical, and therefore, not remediable by medicine. It may very naturally be asked, if a feeble and delicate constitution predisposes to cramp, why is it not an attendant on the last stages of diabetes, phthisis, and other exhausting diseases? Because those diseases produce hectic fever, and hectic is accompanied with a pulse so rapid as to be incompatible with a slow, venous circulation. Nor does it supervene in debility after profuse hæmorrhage; the rapid pulse of reaction and the half empty vessels affording a satisfactory explanation of its absence. The severest cramps we witness from arrest of circulation in the veins of muscles, are those which add so much to the horrors of epidemic cholera, for these cramps, although general, in an exact sense must be considered local, no muscle contracting until the blood in its own veins is arrested. It is an error to attribute the cramps of epidemic cholera to a poisonous quality of the disease, and the recollection that our own autumnal cholera is accompanied with similar cramps should disabuse us of this mistake.

In neither form of cholera do cramps supervene, until the venous circulation through the muscles is almost impeded from the density of the blood, a natural consequence of the exudation of its serous portion. No person can doubt that in epidemic cholera the circulation is from this cause almost arrested; for on puncturing a vein, the blood trickles down slowly, thick and dark as tar. Fatal cases of Asiatic cholera, it is true, are recorded, where few or no evacuations took place, yet cramps, although not violent, were noticed. Such cases might favor the opinion that the cramps depended on the inhalation of a specific poison, did not the post-mortem examination discover the exuded serum still in the intestinal tube, consequently the cramps were present, but less severe than where the exuded serum was too abundant to be retained in the intestines.

That there are poisons capable of coagulating the blood in its vessels, and that coagulation is attended with muscular contrac-

tions, cannot be denied. Dr. Pereira, in his last edition of "Elements of Materia Medica," quotes the *Journal de Chimie Medicale*, to show the physiological effects of bromide of potassium. Thirteen grains, dissolved in water, and injected into the jugular vein of a dog, coagulated the blood, and caused convulsions and death in a few minutes. But the same medicine taken into the stomach in larger doses produced vomiting only. As a clinical fact in English cholera, it is interesting to observe how much sooner the cramps cease when the stomach does not reject fluids; for the veins are soon refilled, and thus the proportion between the crassamentum and serum is quickly restored. The so-called secondary fever of Asiatic cholera arises solely from congestion of the venous system generally, and this congestion is peculiar, the fault existing in the blood itself being too thick, from having parted with its serum, to be influenced by the action of the heart. Rigors, or rapid involuntary contractions of muscles, are seen after exposure to cold, at the commencement of most fevers, and in the first stage of ague; for the first stage of these diseases is characterized by the desertion of blood from the superficial to the deep-seated veins, and these rigors or contractions are salutary; for by compressing the deep veins, the blood is restored to the superficial vessels, causing the phenomena of reaction. In fevers there can be nothing more alarming than the absence or prolonged delay of rigors. When scarlatina threatens to be unfavourable within twenty-four or thirty-six hours from its invasion, there are no rigors, for the muscles seem to have lost this salutary contractile power. A cramp may therefore be regarded as a painful but useful action of a muscle to assist in the circulation of venous blood.

Angina Pectoris.—No person can witness a paroxysm of this disease in a fellow-creature without a feeling of sympathy. The pain is most acute, and the alarm and distress pitiable. It is admitted that angina is a spasm of the heart, but the cause of the spasm has been attributed to almost every disease to which the heart is liable—ossification of the coronary arteries, disease of the valves, hpertrophy of the vetricles, and fatty degeneration of its substance, and certainly it has co-existed with most of those diseases; but yet, on the other hand, almost every form of heart-disease is daily witnessed, yet happily unaccompanied with angina. There is, however, no well authenticated report of angina in an uncomplicated case of adhesion of the pericardium, and it seems anatomically impossible. Simple ossificaton of an artery is not a cause of cramp; there is no cramp attends Pott's mortification, for ossification rather cuts off the supply of blood, and therefore the veins must be more or less empty.

If we admit, and it can scarcely be denied, that the arrest of venous blood in a muscle is a cause of cramp, we have a very

plausible explanation of the proximate cause of angina, and why it may arise from almost every disease of the heart, and yet be absent in diseases apparently similar, for it is only when there is an impediment in the circulation of the coronary veins that the phenomena of angina is produced. Practitioners must have met a modified form of angina which occasionally attends severe cases of chlorosis, or when the circulation is languid from "relachement du cœur." Sudden pain is felt after exertion in the cardinac region, and now and then attended with pain on the inside of the left arm. This pain is quite distinct from the neuralgia of the eighth or ninth intercostal nerve, so common in the hysterical female, and from which the male sex never suffers, while it is not exempt from this angina, especially if the action of the heart be depressed by excess in smoking tobacco.

Ergot of Rye coagulates the blood. After parturition, the veins and sinuses of the uterus being full of blood, while the circulation is more languid, coagulation easily takes place; hence the muscle contracts to expel the blood from its substance. It is an erroneous idea to imagine that the ergot has a specific action on the uterus. On the unimpregnated uterus it has no action. It has utterly failed me as an emmenagogue. Even if pregnancy be of four months' duration no perceptible action is manifested, for in a few such cases I have inadvertently prescribed it, deceived by the character and representations of the patient. That it has the power of coagulating the blood is shown by mortification of the parts most distant from the heart, being the effect when it has been taken for any length of time. It is surprising how strongly impressed medical men are with the idea that after-pains are occasioned solely by clots in the womb. Before the adoption of this opinion it should be asked how it is that the uterus, which tolerated for nine months the gradually increasing bulk of the fœtus, could be thrown into spasms from the presence of a small quantity of blood. Hydatids and moles will form, and distend it to an immense size, and yet it will be passive under their irritation.

Many facts countenance the idea that the primary cause of parturition is the coagulation of the blood in the sinuses, which is necessarily followed by muscular contraction. Ergot of rye coagulates the blood, contraction follows; small-pox kills the fœtus, the circulation ceases, contraction follows, in epidemic cholera the liquor amnios is removed, death then follows, and contractions supervene. The unimpregnated uterus is not liable to spasm.

Dysmenorrhœa.—The anatomy of the unimpregnated uterus displays its muscular fibres in a complete state of contraction; the cavity is almost nominal, and therefore a spasm or cramp of this organ is impossible. Dysmenorrhœa is not spasm, the pain

is continuous, and women describe the pain as quite dissimilar from that of labour. As in such cases the menstrual fluid escapes with difficulty, the pain is probably that of distention, owing to the os tincæ being narrowed. Dr. M'Intosh, of Edinburgh, relieved his patients by introducing a metallic sound, proving the correctness of his theory; and another proof is, that mothers are seldom if ever annoyed with this complaint, although previously to parturition they were monthly martyrs.

We hear frequent mention of spasms of the sphincters of the rectum and bladder, and as their veins are very small the retardation of blood could not be the cause of these local cramps. But contraction is the normal state of a sphincter, and the contraction is so complete as to resist the escape either of urine or gas; closer contraction seems impossible, rendering the idea of spasms improbable. Since the discovery that the severe pain at the anal orifice when emptying the rectum depends on ulcers and fissures of that part, spasmodic stricture of the rectum is never heard of. Sphincters have no self-dilating power; they would therefore remain permanently contracted were it not for the mechanical action of the urine and fæces escaping.

The pain of cramp arises not from muscular contraction, but from the severe pressure on the nerves of sensation which traverse a muscle. Voluntary contraction is incapable of producing pain. Paraplegia and other diseases would furnish me with more abundant proofs, but enough has been said to let the correctness of these remarks be tested.

Stone-street, May, 1853.

From the Transylvania Medical Journal.

Tracheotomy for Opiate Poisoning.

On the 19th March, at 2 P. M., Mr. Z., of Lexington, about 50 years of age, took a large dose of morphia by mistake. He was found in an hour afterward in profound coma. His breathing was stertorous, and only from two to four per minute. Several physicians were in attendance and employed the usual remedies without effect. On the morning of the 20th, the coma still continued; pupils contracted, and respiration from four to six per minute; pulse 100 and feeble. The operation of Tracheotomy was performed at 11.40, A. M., and the patient survived until 6, A. M., 21st. The operation was suggested by the imperfect character of the respiration, and the increasing cyanosis. The insensibility had become so great that the eyelids and the muscles of the face generally, were quiet under percussion and tickling. In twenty minutes after the operation, the masseter and temporal muscles, and obicularis palpebrarum, contracted when gentle

percussion was practised on the temple. In thirty minutes the muscles of the face and neck were generally excitable—pulse a little more full—respiration irregular—from four to sixteen per minute.

Electro-galvanism was employed at 12.41—muscular system very exciteable—respiration averaged about 10 per minute. The cyanic appearance of the surface disappeared, the natural color of the lips and face indicated a good circulation. At the moment when the operation was performed, it was thought impossible for the man to live two hours. The effect of the artificial respiration was to arouse, very sensibly, the activity of the reflux arteries. The brain was too profoundly affected to be relieved.

Would an operation at an earlier hour have produced a better result? The difficult respiration depended partly on the relaxed state of the muscles of the larynx, and the improvement was marked after the introduction of the tube.

Lexington, 9th May. E. L. D.

From the New-Hampshire Journal of Medicine.

Have we a Homœopath among us?

(A SHOT in the right direction. May it provoke a discharge of the little pills?)—EDS. N. W. M. & S. JOUR.

There is a fair prospect that this question must be asked by the members of the National Medical Association at their meeting next month; for, strange as it may appear, this body of physicians are not secure from the presence of homœopathists or any other one-idea practitioners. To explain we quote the following paragraph, headed: "Legitimate Medicine and the Massachusetts Medical Society," from the Boston Medical Journal:

"Report says that a paper is about receiving the names of petitioners to the Mass. Medical Society, requesting the adoption of measures by which the homœopathic members of the Society shall be excluded from the same; and if such measures are not adopted, then it is stated the memorialists will themselves sever their connection with the Society. Perhaps rumor may have exaggerated the determination of the dissatisfied; but that something is contemplated of a decisive character, in relation to the homœopathists in our State Society is generally credited. Should a strong demonstration be made to thrust them out, it is impossible to divine the condition in which all parties will find themselves when the smoke of party feeling clears up. Several estimable, highly-educated young physicians, who have complied with every demand of the University, and studied under the best masters of medicine, have abandoned every precept and principle recognized

in the schools, and turned homœopathic practitioners. What is to be their destiny? Are they empirics, irregular practitioners in every sense, and therefore justly denounced by those with whom they formerly associated? This, and similar questions, will naturally arise, and must be met without equivocation."

We have been aware of this condition of things in the Massachusetts Medical Society for some time, but as no statement of it has before met our eye, we have not felt at liberty to do more than allude to it. We have now the announcement of this anomalous state of affairs, under the authority of the venerable editor of the periodical from which this extract is made. Let us examine it, and consider how this affects other similar bodies.

It is evident, then, that there are in the Massachusetts State Medical Society certain men who are homœopathists; and, for all that appears to the contrary, they are in good standing. It also seems that there is a report "that a paper is about receiving the names of practitioners, requesting the adoption of measures by which the homœopathic members of the Society shall be excluded;" and report farther says, that if a measure is not adopted, then the memorialists themselves will sever their own connection with the Society. The writer is not sure that this determination is not exaggerated, but "it is generally credited" that something *of a decisive character* is contemplated. We rejoice that there is even a *rumour* that any members of that Society are unwilling longer to associate themselves in a medical society with those who deny the truth of the principles of medical science;—and do not at all understand how they have endured it so long. They are members of the same Society, but do they *consult* with them? Do they recognize them as physicians *in* the Society, and refuse to do so *out* of it? But, "should a strong demonstration be made to thrust them out, it is impossible to divine the condition in which all parties will find themselves, when the smoke of party feeling clears up;" that is to say, it is impossible to tell who will be successful in this conflict, the petitioners or the homœopaths. Is it not so? But are the homœopaths so numerous in that body that they can carry a majority? Or are those who would not tamper in any way with this form of quackery so few that they cannot expect to be successful? Still this body sends its delegates to the American Medical Association, one for every ten members. How many of these delegates at the next session will represent homœopathists? Or how many of these delegates will *be* homœopathists? If none, we shall be glad; but what security is there that there are, or will be none? Is it right, is it honorable for a Society which retains amongst its members those who are avowed homœopathists, or any other sectaries in medicine, to send delegates to meet those from other similar associations, which at once reject any and every man who thus proves a renegade to all true

science? It is impossible, then, to deny that a homœopathist may claim a seat in the National Medical Association as justly and as securely as any other delegate from the Massachusetts State Medical Society. If the members of the Association are true to themselves, this danger need not again occur; but if they falter, their seats may be occupied by all kinds of empirics, and their Society lose all its influence and authority.

Our neighbor, from whom we copy, seems to be a little puzzled as to what to do with "several estimable, highly-educated young physicians, with every requisite of the (Cambridge?) University," etc. Are they any the less "empirics, irregular practitioners in every sense, and therefore justly denounced," because they have had unusual advantages? We apprehend not, but are the more to be blamed that they have thus turned away, after having been made familiar with the instructions of science. True, such questions as these are to be met without equivocation, and we feel proud that we at least are not compelled to blow hot and to blow cold to retain subscribers, or to fill the pocket of our publisher, or in any other way to dally with this or any other form of charlatanism.

EDITORIAL.

What to observe at the bed-side and after death in Medical Cases. Published under the authority of the London Medical Society of Observation. Philadelphia: Blanchard & Lea, 1853.

This work was designed for the purpose of giving uniformity to the order of the clinical observations of the members of the society. It suggests to the physician the different subjects to be investigated and organs to be examined, as well as the order in which each should be taken up. These are all particulars in which many physicians are deficient, and on the account of which their observations lose much of their value.

For sale by A. H. & C. Burley. J.

Principles of Botany, as exemplified in the Cryptogamia, for the use of Schools and Colleges. By Harland Coultas. Philadelphia: Lindsay & Blakison, 1853.

It is a peculiarity of the profession of medicine, that its science comprehends the whole field of the natural sciences. It is a vast temple, its dome bathed in the pure life-giving air of heaven, its foundation laid deep in the earth, its walls built of the solid rock, its altars decorated with gems from every clime, and precious ores from every mine, its tapestry the green foliage gathered from every forest, and its carpeting the flowers from a thousand hills and a thousand vales. This building of beauty and grandeur is, or should be, the home of the physician; air, earth, mineral plant and flower, are all his to use as instruments for alleviating the suffering of the race and for combating death. It is true, we may not, each one of us, have examined carefully and understood perfectly all the different branches of the one great science, we may not each have ministered at all the altars of the temple, but it is our boast, that our science is a unity, that at every altar the same name is invoked and the same rite performed. In true medical sciences there are no schools or sects; there can be none, from the very necessity of the case. It is only when we come into the region of theory and speculation; when, leaving the known, we pass into the

unknown, and see all things by a dim intellectual twilight, that we may differ in our conjectures of the realities of our surroundings.

We have been led, strangely, perhaps, to the above train of reflections, by the little work whose title stands at the head of this article. It is an introduction to the science of botany, rather than a treatise. The question is asked, how does nature, the architect of the floral temple, form this green leaf and beautiful blossom? What are the modes in which she works for the accomplishment of such varied and beautiful results? Although we cannot answer, satisfactorily, this question, we can unfold the structure, observe the relation, and study the functions of parts. In the first chapter the author treats of cellular tissue, of the primitive and modified forms of cells. In the second chapter the subject of woody and vascular tissue is discussed. In the third, the development and functions of cells. This is an interesting chapter and completes the first part.

The second part treats of the compound organs of plants, the cryptogamia or flowerless plants. The whole work is interesting, and fulfills the intention of the writer, by exciting a desire to know more of the phenomena of life. We agree with the author, "that the study of the simple plants ought to take the precedence of those whose organization is more complex and intricate, as being the simplest expression of the laws of vegetable life.

J.

The Virginia Medical and Surgical Journal. Edited by Geo. A. Otis, M.D., & Howard L. Thomas, M.D.—*Amicus Socrates, Amicus Plato, Sed Magis, Amica Veritas.* Richmond, Va. Published monthly at five dollars a year.

The numbers of this Journal already received, give evidence of industry and ability on the part of its editors.

In their introductory they say: "Ours is a catholic work, the organ of no sect or party; its interests are those of the whole profession; it owes allegiance or obligation to none. With the inflexible resolution to preserve this character, we look to the future with sure faith, and even with the long and dreary history of med-

ical journals before our eye, we cannot believe that we propose another twelve months' voyage to obscurity and the chaos of failures."

It is with physicians as with the people, the greater the number of medical publications, the more they read on those subjects demanding their attention, and the better instructed they become in the principles and practice of their profession. In the families of our farmers, mechanics, and merchants, we seldom see less than two or three periodicals and newspapers. They supply food for the mind, stimulus to thought. It is the same in the professions; the physician who is accustomed to read several medical journals, will, (other qualifications being equal) be a better practitioner, and receive from the profession and the public, more respect than he who reads but one or none at all. We want more light in medicine; we need a greater dissemination of medical truth, and a fuller record of medical facts. Medical periodicals are the means through which this is to be accomplished; but, in order that they may fulfill their mission, they require the aid and the support of the profession.

We believe with some of our eastern friends, that it is a sin to send to medical men, year after year, a valuable scientific journal, without any remuneration, either pecuniary or othewise. Men, who do not value a work sufficiently to pay for it, very seldom read it. We, ourselves, have seen in the offices of physicians, the pages of valuable eastern journals, prostituted to the inglorious purpose of wrapping up calomel and jalap. Just think of it, Messrs. Editors of the Virginia Medical Journal; your articles, on which you have bestowed so much care, and of which you have reason to be a little proud, to be cut up into little square bits, and nicely folded, enclosing a dainty morsel of quinine and carb. of iron, just as if your wisdom and knowledge, by mere contact, could impart a potency to the bitter potion.

But to be serious, we hail the appearance of every new medical journal as a co-laborer in the great field of medical science, as a new beacon for the dissemination of medical light, as a new store house for medical facts. As in literature and politics, the more men read, the greater the demand for literary and political publications; so in the professions, and especially in that of Medicine,

the more familiar men become with the condition of our art and science, the greater the demand for our periodicals—the true exponents of our professional progress. J.

The Medical Chronicle, or Montreal Monthly Journal of Medicine and Surgery. Edited by Wm. Wright, M·D., & D. G. MacCallum, M.D., Montreal, Canada.

The Canada Medical Journal is but just dead, and behold, the Chronicle as if arising from the very ashes of its predecessor. Verily, if medical journals were monsters, we might conclude that in Montreal there is a hydra; no sooner is one head dead than another sprouts up. We hope this will not die from starvation. It deserves a better fate. Price $2 per annum, payable in advance.

J.

Respiration subservient to Nutrition.—A Thesis presented to the Medical Faculty of Harvard University, March, 1850. By E. Leigh, M. D., Townsend, Mass.

The above is the title of a Thesis, which, as appears from the title page, was presented to the Medical Faculty of Harvard University, in 1850. The object of the writer in permitting this production of his to appear in print, more than three years after its presentation to the above named honorable Faculty, is not as apparent to us as it might be, perhaps, were we better acquainted with the circumstances and influences by which he has been thus recently made mindful of a long neglected duty; for his views upon the respiratory functions, though passably well expressed, are not new or materially different from those of all well informed Physiologists of the present day. H.

We are gratified, as we are sure our readers will be, in being able to present in this number of the Journal an original communication from Dr. Marshall Hall. Dr. Hall is now making a tour through the United States, and during his recent visit in this city performed several experiments illustrating his doctrine of the spinal system. We shall publish an account of them in our next.

J.

Proceedings of the Medical Association of the State of Alabama, Sixth Annual Meeting, December. 1852.

THIS volume of 168 pages was received some time since, and should have received an earlier notice.

The published transactions of our medical organizations have now become an important part of our medical literature; embodying a more reliable account of the character of diseases in different sections of the country, and the various modes of treatment adopted, than can be found elsewhere. Our brethren in Alabama seem to have had a pleasant and profitable meeting. Several interesting papers were read, and considerable time very properly spent in the discussion of the nature and treatment of *Typhoid Fever*. It is known to most of our readers, that several eminent physicians in the Southern States have declared quinine to be scarcely less valuable and efficient in the treatment of typhoid fever, than in fevers of the true periodical type. On this point we find the following recorded in the minutes before us, viz:

Dr. English requested the views of the Fellows of the Association on the use of Quinine in Typhoid Fever. Previous to the present year he had tested its efficacy and at one time was in favor of it, thought it might even cut short the disease. He now considered those opinions erroneous, the abortive treatment with him now failed entirely; has given it in large doses, ten, twelve and fifteen grain doses every three hours, and continued it for thirty-six hours: thought that while the patients were under the influence of those doses, that the pulse became fuller, softer, and less frequent with a free perspiration, but as soon as the medicine was discontinued and its influence passed off, the fever assumed its original features. Had not tried it in only one or two cases, but in several, so that he might be satisfied with the result. He may not have given it in doses large enough, and would like to hear some opinion on the subject.

Dr. Lopez wished Dr. English to state what untoward symptoms he had noticed from the treatment with Quinine.

Dr. English replied that it changed a perspiring skin to a dry and harsh one, and produced derangement of the nervous system. It was very hard to define what was really Typhoid, and the difference at first between that Fever and Remittent was difficult to distinguish; he has sometimes used Quinine as a test between the two, considering it a specific in Remittent Fever; when given in those large doses in Typhoid, thought it did no good; in small doses there was not much alteration.

Dr. Lopez enquired whether the organs of animal life were effected.

Dr. English thought it did appear to produce some narcotic effect. Thinks that one difference between the fever in the beginning, is the absence of pain or complaint on the part of the patient; knows, however, of no distinctive mark by which it can be at first diagnosed.

Dr. Batchelor enquired, if for the first few days he did not find distinct remissions.

Dr. English answered, he did not.

Dr. Reese, of Selma, stated that the difference depended in a great measure on difference in locality. He considered Typhoid Fever as decidedly an enteric disease, and any medicine that would have an irritant effect upon the mucous surfaces pernicious. He considered Calomel poisonous in the treatment of this fever. Saw the disease first in Lowndes county in 1846, where it was endemic; considers it a distinct disease and infectious when malignant; thinks the pathology varies in localities, and this has led to the unsettled opinions in the minds of Physicians, proscribes every thing which would aggravate the enteric disease. Differs with Dr. English even as to the apparent good effect of Quinine, thinks it decidedly pernicious; does not think Quinine produces diaphoresis; checks all secretions.

Dr. Batchelor enquired what were the symptoms when even pain of the abdomen was absent, by which he could at first determine his diagnosis.

Dr. Lopez asked whether Dr. Reese had made many post-mortem examinations, and if he believed the enteric disease to consist of the degeneration of glands spoken of by the authors.

Dr. Reese replied that he had not enjoyed many occasions for post-mortem examinations. He proceeded to mention several symptoms by which he thought the disease could be diagnosed; one symptom was the presence of abdominal heat, recognizable by the touch; another borborygma; another the effect of remedies; if the disease respond to purgatives, most always the purgation is extreme, a small dose of oil often producing a large number of evacuations; another symptom was the odor of fæces in the breath; has noticed this symptom often, and by it been able to recognize the disease; accounts for it by the glands not eliminating, and the odor is exhaled with the breath; another symptom is the tympanities; another cerebral excitement or depression; another hard and contracted state of the abdominal muscles.

Dr. Bates, of Marion, thought there was a great difference of opinion as to what Typhoid Fever is—our best authors have not given a clear description as it appears here. Watson classes it as an axanthematous disease. Dickson ranks it among continued fevers. The question is, what is Typhoid Fever, and what its treatment?

The symptoms, he thinks, are these: Not much complaint at first on the part of the patient, slight pain in the head and back, a sense of weariness; on close examination pulse will be found to vary from 78 to 88; heat, in most cases, increased, especially in the abdomen; sometimes, but not always, slight pain on pressure, and often an uneasiness; evacuations almost healthy, but close examination will discover an unnatural odor, and a lighter color In some cases he has seen the pulse decrease; in three cases which come under his care, it came down to 45; in mild cases the tongue little furred, with the edges a little red, appetite tolerable good; in severe cases these symptoms, generally yet worse, more headache with restlessness at night, often troubled with unpleasant dreams. Considers it an enteric disease, affecting the bowels with degeneration of glands; believes it at first a state of nervous depression which acts upon the glands of the abdomen, and this again by reflex action upon the nervous system. Treatment should correspond; gives nothing which will irritate, food nutritious, demulcent drink, and bowels kept open by laxatives of the mildest nature. His favorite prescription is Chlorate Potass. as a mild, cooling refrigerant, which greatly relieves the patient of his thirst and dry tongue.

Believes mercurials given for their constitutional effects, injurious. Gives it some times in its mildest form as Blue Mass, when the liver seems to be a little torpid, or in the form of Hydg. Cum Creta, when diarrhœa supervenes.

When the system becomes depressed with sub-sultus tendinum, dry and harsh tongue, he used stimulants, and for this purpose prefers the Carb. Ammoniæ, of which he thinks very highly. He however, endeavors to anticipate this stage by giving the Carb. Ammoniæ in small doses. With regard to Quinine, he at first gave it experimentally in 2 or 3 grain doses every two or three hours, and found it produced exaltation of the vital forces. Has given it in ten grain doses every three or four hours with same effect. Have never seen it do any good unless there was an exacerbation, and has then given it in 10 or 15 grain doses to relieve the exacerbation, but never found it stop the progress of the disease.

Dr. Gee replied what were the symptoms for the first five days.

Dr. Baaes required there was restlessness, with pain in the head and back, pulse either higher or lower. In the morning he noticed the pulse was in most cases about 78, but at night rose to 88.

Dr. Lopez enquired whether he thought it a paroxysmal disease.

Dr. Bates replied he did not. Believed it to be an ataxic or adynamic disease, *sui generis*. Thinks Remittent Fever, badly treated, may run into a low form of fever, and that Typhoid Fever may be modified by a malarial influence.

Dr. Jenkins, of Wilcox, had seen in a great majority of the

cases which had come under his notice a distinct remission from 3 to 5 in the morning. In nearly all his cases there was diffuse diaphoresis, and the disease was infectious. He had used Iron, Quinine and Mercury separately, but with no beneficial effect. He had at last adopted the expectant mode of treatment with success.

The President enquired whether there was any eruption visible.

Dr. Jenkins replied, that he had seen in a majority of cases sudamina on the breast, and in some few, rose colored spots on the abdomen.

Dr. Bates has never been fully satisfied that he had seen any eruption. Cases were mostly negroes, and he examined very closely.

Dr. Marks, of Selma, thought in the state of depression Quinine the best stimulant, but had never seen it cut short the disease.

Dr. Fair, of Selma, stated, that as far as his experience went, he had never seen Quinine produce any curative effect in this disease. He thinks Typhoid a special and peculiar disease, and that it acts primarily on the nervous system. Dr. F. spoke at some length, but the Secretary not having the benefit of Dr. F.'s correction of his notes, has thought it best, for fear of misstating some of the Dr's. opinions, not to publish them.

It will be seen that the opinions here expressed, do not give countenance to the idea that quinine is capable of exerting any curative influence over typhoid fever, and such, we think, will finally be the unanimous verdict of the profession both in the North and the South.

The following are the essays and papers contained in the volume before us, viz: Report on Indigenous Botany, by A. Denny, M.D.; Report on Diseases of Centreville and Vicinity, by J. W. Crawford, M.D.; Report on Surgery, by L. H. Anderson, M.D.; Cases reported by J. F. Gee, M.D.; Report on the article Gelseminum Sempervirens, by J. C. Batchelor, M.D.; Report on Diseases of Cahaba, by J. A. English, M.D.; Report an Indigenous Botany of Perry, by F. A. Bates, M.D.; Changeability of Disease, by W. Taylor, M.D.; Paper on the Unity of Disease, by H. Backus, M.D.; Prize Essay on the Summer and Autumnal Fevers of South Alabama, to which is appended some remarks on the Diagnosis and treatment of Typhoid Fever, by L. H. Anderson, M.D.; Valedictory Address, by F. A. Bates, M.D.; Reports on the Number and Character, etc, of Practitioners of Medicine, by J. P. Barnes, M.D., A. Denny, M.D., F. E. Gordon, M.D., and R. H. Irwin, M.D.

Some of these papers are of sufficient importance to require a separate and more extended notice. Such is particularly the case in reference to the Prize Essay of Dr. Anderson, which (if time permits) we will examine more in detail in the next number of the Journal. N. S. D.

Abstract of the Proceedings of Cook County Medical Society, at a Meeting held July 5th, 1853. By the Secretary, DELASKIE MILLER, M.D.

DR. MORFIT read a paper, directing the attention of the members of the society to the effects of the vapor of mercury and bromine upon the system, as experienced by persons engaged in the daguerrean art, such as suppuration of the lymphatic glands, especially of the inguinal region, and abscesses in the axilla.

Dr. Bloodgood remarked, that he had seen some accounts of the effects of bromine upon the system, especially upon the respiratory organs, but thought it somewhat questionable, whether the vapor of mercury caused the abscesses described by the paper. Physicians are constantly in the habit of prescribing mercurials to discuss inflammation of lymphatic glands.

Dr. Freer was of the opinion that it is quite probable, that the fumes of mercury may cause inflammation of the glands, like that referred to in the paper; for it is a matter of common observation, that the continued use of mercury, causes great irritation of the glandular system. He considered the subject one of interest, and moved, that the discussion be continued at the next meeting of the society.

An interesting paper was read by Dr. Freer, describing the experiments made by Dr. Marshall Hall, during his recent visit to this city.

Dr. Palmer said, that in order to fully understand and appreciate these experiments, it is necessary to have some precise ideas of Dr. Hall's theory, and also of Dr. Dowler's theory and experiments upon the alligator, upon which it was founded; and suggested that some of the members who had recently been paying attention to the subject, should give a precise statement of the points of difference between Dr. Hall and Dr. Dowler.

Herrick explained, that Dr. Dowler assumes that there is

a diffuse sensorium, and that sensation pervades every part of the system, independent of the encephalon. Dr. Hall contends that his experiments demonstrate, that through the connection of the reflex system of nerves with the spinal cord, the power of motion remains after the brain has been severed, but, that sensation and volition are lost.

Dr. Johnson remarked, that there is a question of fact between Dr. Dowler and Dr. Hall. Dr. Dowler asserts, that after the removal of the encephalon and destruction of the spinal cord, there was still motion, apparently voluntary and directed by intelligence. Dr. Hall claims, and his experiments prove, (as Dr. J. thinks) that after the destruction of the brocere-spinal axis, there are no motions either voluntary or involuntary.

Dr. Palmer inquired, if Dr. Hall had ever experimented upon the alligator, and if he was a proper judge of Dr. Dowler's facts? and suggested that there was a difference in organization between that animal and a frog.

Dr. Davis said, he had bestowed some thought upon the subject, and had a remark to make. Thinks it questionable, whether we are ever to arrive at any satifactory conclusions upon this subject from this manner of experimenting. Experiments like those referred to, made upon animals of different species and of a different organization, to establish the truth of one hypothesis and disprove another, can lead to nothing but confusion. We must go back to what is no new doctrine in the field of physiological inquiry, and that is this, that there is a gradation in animal organization, causing a wide difference in the nature and habits of different species, and therefore it is but reasonable to conclude, that experiments made upon different species of animals to elucidate a peculiar hypothesis, must lead to different conclusions.

Dr. Johnson read a paper on "Oxalate of Lime and its relations to certain forms of Neuralgia," in which he expressed the opinion, that they often sustain to each other an intimate relation through a common cause, viz: a derangement of the digestive organs. He was led to this conclusion from the fact that in a large number of instances in which he had discovered oxalate of lime in the urine, the patients were affected not only with dyspepsia, but were subject to frequent neuralgic attacks, the severity of which, bore a direct relation to the quantity of the oxalic deposit.

He also called the attention of the society to the influence of citric acid, in producing oxalic deposits, and related some experiments, which seemed to prove, that the use of orange, currants, whortleberry, and perhaps other fruits containing citric acid, favor the production of oxalic acid.

The discusssion of this paper was deferred till the next meeting of the society.

For the North-Western Med. and Surg. Journal.

MESSRS. EDITORS,

The following Circular in relation to the next volume of Transactions of the American Medical Association was received a few days since, and I know of no better way to call the attention of the profession, in this section of country, to it, than to procure its insertion in the columns of your journal. From what I know of the contents, I can assure your readers that the *Sixth*, or forth-coming volume, will be one of great value; one of the Essays, with its illustrations, being alone worth more than the *five* dollars required for the whole. I trust, therefore, that many of your readers will secure for themselves a copy by remitting early the required amount. The following is the Circular, viz:

PHILADELPHIA, June 14, 1853.

DEAR SIR,

In conformity with a resolution of the American Medical Association, it becomes my duty to inform you of the decision of the Committee of Publication in regard to the price at which the forthcoming volume of the Transactions will be furnished to the members of the Association and to others.

The price of *single copies* has been fixed by the Association at *five dollars.*

Any *individual* desiring two copies, will be furnished with them upon his remitting to the Treasurer *nine dollars.*

Societies, Associations, and Institutions requiring *six* copies for the use of their members, will be supplied with them on remitting to the Treasurer *twenty-five dollars*, or they will be supplied with twenty-five copies on remitting *seventy-five dollars.*

Those who wish volumes 5 and 6, may obtain them by remitting *eight dollars.*

In consequence of the numerous illustrations, many of them highly finished colored lithographs, with which the forthcoming volume will be accompanied, its cost will considerably exceed that of either of those previously issued by the Association. To defray the cost of its publication, at least *fifteen hundred dollars*, in addition to the amount already received by the Treasurer, will be required.

Your attention is called to the following resolution adopted at the last session of the Association.

"*Resolved*, That the Delegates from the several States be requested to appoint Committees, who shall aid the Committee of Publication in procuring subscribers for, and in distributing the Annual Transactions of the Association."

Respectfully, yours,

D. FRANCIS CONDIE,
Treasurer, and Chairman Com. of Pub. A. M. A.

Very respectfully yours,

N. S. DAVIS.

Chicago, July, 1820.

We cheerfully give place to the above Circular and Note from Prof. DAVIS, especially as we fear that the Publishing Committee have forgotten that there is such a work as the *North Western Medical and Surgical Journal.*

We should be very glad to look over the last volume. What say you, Dr. CONDIE; shall we have the pleasure of expressing our opinion on any of its contents?—(EDS. N. W. MED. & SURG. JOURNAL.)

American Medical Association.

At the meeting in New York, in May last, Dr. YANDELL, of Ky., presented a report from Dr. S. D. GROSS, on the result of surgical operations for the relief of malignant diseases, in which he arrives at the following conclusions:

First—That cancerous affections, particularly those of the mammary gland, have always, with a few rare exceptions, been regarded by practitioners as incurable by the knife and escharotics. This opinion, commencing with Hippocrates, the father of Medicine, has prevailed from the earliest records of the profession, to the present moment. Nature never cures a disease of the kind; nor can this be effected by any medicine, or internal remedies, known to the profession.

Secondly—That excision, however early and thoroughly executed, is nearly always, in genuine cancer, followed by relapse, at a period varying from a few weeks to several months, from the time of the operation.

Thirdly—That nearly all practitioners, from the time of Hippocrates to the present day, have been, and are still averse to any operation for the removal of cancerous tumor, after the establishment of ulceration, rapid growth, firm adhesion, organic change in the skin, lymphatic invasion, the cancerous dyscracy, or serious constitutional derangements; on the ground that, if had recourse to, under these circumstances, the malady almost inevitably recurs in a very short time, and frequently destroys the patient more rapidly than when it is permitted to pursue its own course.

Fourthly—That in all cases of *acute* carcinoma, or, in other words, in all cases of this disease, attended with very rapid development and great bulk of the tumor, extirpation is improper and unjustifiable, inasmuch as it will only tend to expedite the fatal result, which, under such circumstances, always takes place in a very short time.

Fifthly—That all operations performed for the removal of encephaloid cancer and its different varieties, are more certainly followed by rapid relapse than operations performed upon scirrhus or hard cancer.

Sixthly—That in nearly all the operations for cancerous diseases, hitherto reported, the history has been imperfectly presented, being deficient in the details which are necessary to a complete and thorough understanding of the subject in each case. This remark is particularly true in reference to the diagnosis of the malady, the minute examination of the morbid structure, and the history of the case after the operation, as to the period of relapse, the time and nature of the patient's death, and the result of the post-mortem examination.

Seventhly—That cancerous affections of the lip and skin, now usually described under the name of cancroid diseases, are less liable to relapse after extirpation than genuine cancerous maladies, or those which are characterized by the existence of the true cancer-cell and cancer-juice.

Eighthly—That, although practitioners have always been aware, from the earliest professional records, of the great liability of cancer to relapse after extirpation, a great majority of them have always been, and still are, in favor of operation in the early stage of the disease, especially in scirrhus, before the tumor has made much progress, before there is any disease of the lympatic ganglions, or any evidence of the cancerous cachexy.

Ninthly—That many cases of tumors, especially tumors of the breast and testicles, supposed to be cancerous, are in reality not cancerous, but of a benign character, and consequently, readily curable by ablation, whether effected by the knife or by escharotics. It is to this circumstance that we must attribute the astonishing success which is said to have attended the practice of Hill, of Scotland, Nooth, of England, and Flajani, of Italy.

Tenthly—That all operators insist upon the most thorough excision possible; removing, not merely the deceased mass, but also a portion of the surrounding and apparently healthy tissues, as well as all enlarged and indurated ganglions.

Eleventhly—That the practice has always prevailed, and still obtains, to save, if possible, a sufficient amount of healthy integument to cover the wound, and to unite, if possible, the wound by the first intention; on the ground that these precautions will tend much to retard, if not to prevent, a recurrence of the disease.

Twelfthly—That much stress is laid by writers upon a properly regulated diet, and attention to the bowels and secretions after operation, as means of retarding and preventing relapse.

Thirteenthly—That there is no remedy, medicine or method of treatment which has the power, so far as we are enabled to judge of its virtues, of preventing the reproduction of the morbid action after operation, no matter how early or how thoroughly it may be performed.

Fourteenthly—That life has occasionally been prolonged and even saved by operation after relapse, and in some of the remarkable cases mentioned in a previous part of this report; but that, as a general rule, such a procedure is as incompetent to effect a permanent cure as a first extirpation.

The following is the report of the Committee on Nominations:

The Committee on Nominations, in fulfilling the duty of their appointment, propose to continue most of the Special Committees appointed by the Association in May, 1851, and May, 1852, and to appoint several new Special Committees. They, therefore, submit the following list of Chairmen of Special Committees, with the subjects to them committed:

1. Dr. D. F. Condie, of Philadelphia, Penn., "On the causes of Tubercular Disease."

2. Dr. James Jones, of New-Orleans, La., "On the Mutual Relations of Yellow and Bilious Remittent Fever."

3. Dr. R. S. Holmes, of St. Louis, Mo., "On Epidemic Erysipelas."

4. Dr. Geo. B. Wood, of Philadelphia, Penn., "On Diseases of Parasitic Origin."

5. Dr. R. D. Arnold, of Savannah, Ga., "On the Physiological Peculiarities and Diseases of Negroes."

6. Dr. James R. Wood, of New York, "On Statistics of the Operation for the removal of Stone in the Bladder."

7. Dr. F. Peyre Porcher, of Charleston, S. C, "On the Toxicological and Medicinal Properties of our Cryptogamic Plants."

8. Dr. Goodrich A. Wilson, of Virginia, "On Cholera, and its Relations to Congestive Fever—their Analogy or Identity."

9. Dr. Worthington Hooker, of Connecticut, "On Epidemics of New England and New York."

10. Dr. John L. Atlee, of Lancaster, Penn., "On Epidemics of New Jersey, Pennsylvania, Delaware and Maryland."

11. Dr. D. J. Cain, of Charleston, S. C., "On Epidemics of South Carolina, Florida, Georgia and Alabama."

12. Dr. W. L. Sutton, of Georgetown, Ky., "On Epidemics Tennessee and Kentucky."

13. Dr. Thomas Reyburn, of St. Louis, Mo., "On Epidemics of Missouri, Illinois, Iowa and Wisconsin."

14. Dr. George Mendenhall, of Cincinnati. Ohio, "On Epidemics of Ohio, Indiana and Michigan."

15. Dr. E. D. Fenner, of New Orleans, La., "On Epidemics of Mississippi, Louisiana, Texas and Arkansas."

16. Dr. Chas. A. Lee, of New York, "On Domestic Hygiene."

17. Dr. Daniel Brainard, of Chicago, Ill., "On the Constitutional and Local Treatment of Carcinoma."

18. Dr. N. S. Davis, of Chicago, Ill., "On the Influence of Local Circumstances on the Origin and Prevalence of Typhoid Fever."

19. Dr. George Engelman, of St. Louis, Mo., "On the Influence of Geological Formation on the Character of Disease."

20. Dr. Henry M. Bullitt, of Louisville, Ky., "On the Use and Effect of Applications of Nitrate of Silver to the Throat, either in Local or General Disease."

21. Dr. Robert F. Campbell, of Augusta, Ga., "On the Pathogenic Influence of Feather Beds."

22. Dr. James Bolton, of Richmond, Va., "On the Administration of Anæsthetic Agents during Parturition."

23. Dr. Henry Taylor, of Mount Clemens, Michigan, "On Dysentery."

24. Dr. F. Donaldson, of Baltimore, Md., "On the Present and Prospective Value of the Microscope in Disease."

25. Dr. R. L. Howard, of Columbus, Ohio, "On the Pathology and Treatment of Scrofula."

Committee on Plans of Organization for State and County Societies—Isaac Hays, M. D., of Penn., Chairman; Worthington Hooker, M. D., of Connecticut; Josiah Andrews, M. D., of Mich.; B. R. Wellford, of Virginia; A. L. Pearson, M. D., of Mass.

Committee on Medical Literature—T. S. Bell, M. D., of Ky., Chairman; Samuel H. Pennington, M. D., of New Jersey; Ed.

H. Parker, M. D., of New Hampshire; William K. Bowling, M. D., of Tennessee; Zina Pitcher, M. D., of Mich.

Committee on Medical Education—B. R. Welford, M. D., of Virginia, Chairman; Resign Lowe, M. D., of Iowa; Lyndon A. Smith, M. D., of New Jersey; Jacob Bigelow, M. D., of Mass.; L. A. Dugas, M. D., of Georgia.

Committee on Volunteer Communications—Drs. C. A. Pope, Thos. Reyburn, John S. Moore, J. B. Johnson and A. Litton, of St. Louis, Mo.

Committee of Arrangements—Drs. J. R. Washington, J. S. Moore, S. Pollok, Thos. Reyburn, J. O'Farrar, W. M. McPheeters, C. W. Hempstead and E. S. Lemoine, of St. Louis, Mo.

Committee on Publications—Dr. D. F. Condie, Pennsylvania, Chairman; Dr. E. L. Beadle, of New York; Dr. A. Stille, Pennsylvania; Dr. I. Hays, Pennsylvania; Dr. E. S. Lemoine, of Missouri: Dr. G. Emerson, Pennsylvania; Dr. G. W. Norris, Pennsylvania.

On motion of Dr. WATSON, of New York, the name of the Committee on Volunteer Communications was changed to that of Committee on Prize Essays.

Dr. WELLFORD resigned his place as Chairman of Committee on Medical Education, and the President was authorized to fill the vacancy.

The vacancy was subsequently filled by the appointment of Dr. J. L. Cabell, of the University of Virginia.

Fish of the West.

THE distinguished naturalist, Louis Agassiz, passed through our city not long since on his return from a short tour through the South and West.

His object in visiting this section was to make such arrangements as would enable him to obtain a complete collection of fish from our western waters, preparatory to a classification and description of them in a new work upon this department of natural history, which he is now preparing.

Subscribers to this Journal, and others interested in the subject, would aid the cause of science and do a great favor to one of her most devoted votaries by sending such specimens of fish as may be found in the waters of their vicinity, to Prof. Agassiz, Cambridge, Mass., or to the editors of this Journal, who will transmit to him, with the name of the donor, all such contributions. They should be packed in alcohol, the large fish in casks, the small ones in jars.] H.